AIR FORCE

THE OFFICIAL SERVICE JOURNAL OF THE U. S. ARMY AIR FORCES ★ JULY 1945

B-29 FLIGHT ENGINEER — PAGE 27

"Jiggers, men. The autograph gang is here again!"

New York Furlough

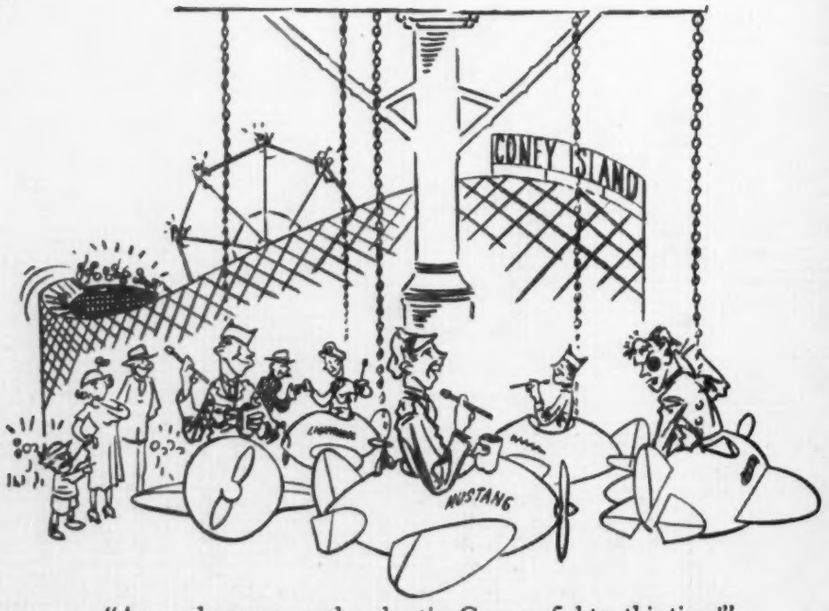
by CAPT. WM. T. LENT

AIR FORCE Staff

"I never really knew what it meant till I went overseas."

"It ain't the altitude that gets me. It's the rate of climb."

"What d'ya hear from the ATC gang back in Accra?"



"Aw, make someone else play the German fighter this time!"

Rendezvous

Cheese Sandwiches

Dear Editor:

The B-29 has been described (and publicized) as the aerial counterpart of the battleship, what with fire control, remote gun positions, etc.

Why not carry the comparison a bit further and designate a damage control party for the B-29. It seems that a number of reinforced rubber patches could be added as equipment and used to stop up bullet holes, and thereby keep up cabin pressure. Internal pressure would keep them in place.

Sgt. Erwin Werthamer,
Section F, Pyote, Texas

Use of patches to stop up bullet holes and retain pressurization in B-29s has had past consideration by ATSC. Actual results of combat missions have shown, however, that improvised patches have worked extremely well and therefore standardization of any specific patch material has been temporarily dropped.

Cheese sandwiches, flying boots, jackets and seat cushions have been used satisfactorily to plug up holes in the fuselage. In one case a B-29 "tanker," had a six-inch hole plugged up with a seat cushion in one of its blisters, made two round trip flights over the Hump with a normal pressurized cabin.—Ed.

The "Bullet"

Dear Editor:

The picture of the Gallaudet "Bullet" which you were kind enough to obtain arrived. It might interest you to know

that this plane actually flew, although it could not have been called an unadulterated success. It had a very marked tendency to "porpoise" and after a few hundred yards, with its 100-horsepower Gnome spewing castor oil, it dove into the ground from a height of about 200 feet. Attesting the value of the metal frame, my uncle, Mr. Gallaudet, was able to crawl out and walk away under his own power although the crash left him with injuries which have come back to haunt him since he was in his late sixties.

John W. Edgerton,
New York.

"Who Dat"

Dear Editor:

Without taking any credit from the fine record of the ATC in Africa, it is only fair to point out that your April article, "Airline Across Africa," omits mention of the work done by personnel of the Air Technical Service Command. Before the ATC as such was organized in this wing, now divi-

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Rendezvous

(Continued from Page 1)

sion, the 8th Air Depot Group of the ATSC was working at Accra and other stations in the division.

S/Sgt. Norman C. McKenna,
Editor, WHO DAT,*
8th Air Depot Group Newspaper.

* Founded November 25, 1942, the oldest continuously published daily in Africa.

Credit should be given to the 8th Air Depot Group of what was then known as ASC. This organization did a very good job in moving supplies up to front line units, long before ATC took over such responsibilities.—Ed.

A Boner

Dear Editor:

While reading the "Boners" column of the April issue of AIR FORCE Magazine, I discovered that AIR FORCE had made a very large boner itself.

Commenting on the evident carelessness of a B-17F pilot who, by mistake, raised the landing gear while taxiing, the author said "This is the type of man who would drop his bombs without opening the bomb-bay doors."

There are two reasons why this is not possible. First, the bomb-bay door safety switch, which prevents electrical release by keeping the electrical circuit open until the bomb-bay doors are nearly open. I'm not sure about the distance, but I believe it's one-quarter of an inch.

Second, on the bombardier's compartment, on the bomb-bay door handle, there is a metal projection which prevents the bomb release handle from being moved to the rear unless it (the projection) is moved to the rear first. This prevents salvo, or mechanical release of the bombs unless the doors are open.

Am I right, or have I "stuck out my neck?"

Yours for a bigger and better AIR FORCE.

Cpl. D. E. Webb,
Class 225, L.V.A.A.F.,
Las Vegas, Nev.

You are right. Our attempt at humor evidently misfired.—Ed.

Overseas Shoulder Patch

Dear Editor:

In the AAF Quiz, April 1945 issue, Question 6 concerns the wearing of the shoulder sleeve insignia of overseas commands by personnel who have returned to this country. The answer given by your quiz editor is that this is not permitted. In my job as Ass't to the AAFPDC Hospital Liaison Officer here at Camp Kilmer, I must pass this type of information on to newly-returned men. Recently, however, the Daily Information Sheet published here contained a paragraph contradicting this answer.

Could it be that your Quiz Kid has slipped? I hope so, for I've already made several changes on my own uniforms in accordance with the above mentioned paragraph.

S/Sgt. Thomas J. Siddons,
AAFPDC Hospital Liaison Office
Camp Kilmer Station Hospital

When the April issue went to press, the answer given in the Quiz was correct. Since then, however, the regulation pertaining to wearing of shoulder sleeve insignia has been amended. See Questions on Policy and Procedure, *Page 37.—Ed.*

From the Seabees

Dear Editor:

I know that it is unusual for a Seabee to write to your magazine, but we are having quite an argument here on the subject of whether the nosewheel of a Douglas C-54 is controllable from the pilot's compartment, and does he use it while taxiing the plane? Or does he just use his brakes? Also the P-38 came up in the same discussion, but we don't have any bets on it. Our outfit is doing the field maintenance work here, but none of these planes (C-54s) ever come in and therefore we would appreciate your answer on this matter.

Robert E. Boardman, M.M. 3/c H-19,
N.C.B.M.U. 432 c/o F.P.O.,
San Francisco, Calif.

The C-54 has a steerable nosewheel, but no nosewheel brake. A six-inch hand wheel

How Sharp are YOU?

Here's a busy scene snapped on the armament range at Wright Field. There's a lot going on so you better take a full 60 seconds' worth of concentration on this photo before you turn to Page 43 to tackle the 10 questions you'll find there. Score 10 for each question. 60 is average, 70 is good, 80 is superior, 90 is excellent, 100 is unbelievable.

HOW SHARP ARE YOU? _____ Turn to Page 43

on the pilot's left is used to control the nosewheel. The nosewheel on a P-38 is not steerable. None of the tricycle gear airplanes has brakes on the nosewheels.—Ed.

Chamber of Commerce

Dear Editor:

Attention is invited to Page 49 of April 1945: Tech Topics—a huge climatic hangar.

Hate to see AIR FORCE make a "Type" error. The Watertown you mention is in the state of South Dakota—not North Dakota.

Got to put a plug in for the old hometown—don't 'cha know.

Cpl. John J. Bacon,
Wright Field, Ohio

You're right, we're wrong.—Ed.

From Down Under

Dear Editor:

Thought you might be interested to hear from a New Zealander in your magazine. Without a doubt I'd say it's the best service or commercial publication hitting N. Z. Have just finished reading your Jan. '45 issue from cover to cover, and was very grateful for the excellent "gen" in "Prepare to Bail Out."

At present I am doing Primary Flying Training and it's articles such as this that are most useful to know about from the start. Also thanks on behalf of all of us for your praises of the RNZAF in a former issue.

Because we use U. S. made equipment, your technical information is very useful.

Here's hoping you the best, and keep up the good work.

LAC Dobbs, P. J.
RNZAF

Our Mistake

Dear Editor:

The article of "Cracking Ice" by S/Sgt. Douglas J. Ingells in the April issue of AIR FORCE Magazine I believe is possibly in error in that the most dangerous temperature zone for icing is 0° C and —18° C instead of F; with the most serious icing conditions occurring around —7° C instead of —70° F as reported.

Temperature of —70° F is encountered only near the tropopause (in equatorial zones) where the moisture content of the atmosphere is extremely low.

I found S/Sgt. Ingells' article to be very interesting and containing many good thoughts.

S/Sgt. Joseph E. Ehrlich,
Base Weather Station,
Kirtland Field,
Albuquerque, N. M.

Conversions from Centigrade to Fahrenheit were incorrect. The article should have stated that the most dangerous temperature zone for icing is between zero-degrees Centigrade and minus 10° C., with the most serious icing occurring around —4° C. In Fahrenheit, the range would be from 32° to 14°, with the most serious icing occurring at approximately 24.8° F.—Ed. ☆

In This Issue

This month's cover features Lt. Henry O. Hagen, flight engineer on a B-29. (The training of the flight engineer and the part he plays on Superfort combat missions are discussed in the article, "B-29 Flight Engineer," on Page 27). Lieutenant Hagen started his air force career in the AAF Technical School at Love Field in April, 1941. He was graduated and assigned to Luke Field Army Air Base where he was a mechanic on P-40s and P-38s, gradually working his way up to line chief. In May of 1943, Lieutenant Hagen was accepted for flight training and subsequently received preflight training at San Antonio, primary at Bonham, Texas, basic at Greenville, Texas, advanced at Ellington Field, Houston. He was then sent to B-29 flight engineer school at Amarillo, Texas, and after completing the six weeks' course there, he went to Lowry Field, Colo., where he took a ten weeks' course. Recently, he was assigned to his permanent B-29 crew which is now in training at Smoky Hill Army Air Field, Salina, Kan., as part of a Superfort group being readied for action in the Pacific. Lieutenant Hagen, who is 25 years old, is married and has a little girl, 15 months old. The photo was taken by M/Sgt. R. H. Haley of the Smoky Hill Base Photo Lab.

☆

Establishment of a Far East Edition of AIR FORCE will be of special interest to the thousands of AAF readers who will presently be deployed to Pacific areas. Late in May the first edition (June issue) came off the presses of Carmello and Bauermann, Inc., 2057 Azcarraga St., Manila. The printing of a Far East edition and maintaining an office in Manila means 1: that we will be able to give more complete coverage to AAF activities in the Pacific; 2: that each issue will be in the hands of Pacific readers within days instead of months after coming off the press. Pioneers in setting up the Far East AIR FORCE were Maj. John Jenks, in charge of AIR FORCE production, and Maj. Tom Hardman, of AIR FORCE editorial staff. They arrived in Manila while it was still smouldering ruins and under shell fire. It was while stumbling through the rubble that they located the only printing facilities that had survived the Battle of Manila sufficiently intact to do a big time printing job. Immediate arrangements were made, with the cooperation of OWI, to secure press time for AIR FORCE. The Far East edition of AIR FORCE, for the time being at least, will be essentially the same as the domestic edition. In fact, the Manila job is printed from duplicate plastic plates that are shipped by air from New York to Manila. At present, distribution is confined to units of the Far East Air Forces of General Kenney. As transport facilities become available, however, it may be that distribution of the Manila edition will be extended to include AAF personnel in all Pacific areas. The Far East Edition of AIR FORCE, like the domestic edition, is under the direction of Lt. Col. James H. Straubel, who is at present on a tour of duty in Manila.

☆

While on the subject of branch offices, there is Maj. Robert V. Guelich, whose article, "Silent Partner of U. S. Airpower," appears on Page 28, who has been in charge of our Wright Field office since May, 1943, except for a tour of duty as correspondent in the CBI. Bob Guelich is familiar to AIR FORCE readers for his many articles on technical and semi-technical subjects. At present he is working on a compressibility article, hoping to qualify for the Order of Compressibility Experts. Membership in this informal organization is achieved by "having completed an arduous course of study in compressibility phenomena, having thereby confused, constricted and machtified any thinking faculties as to be now rendered wholly worthless for any useful pursuit." A full fledged member is entitled "to pass confident judgment on matters of which he knows nothing."

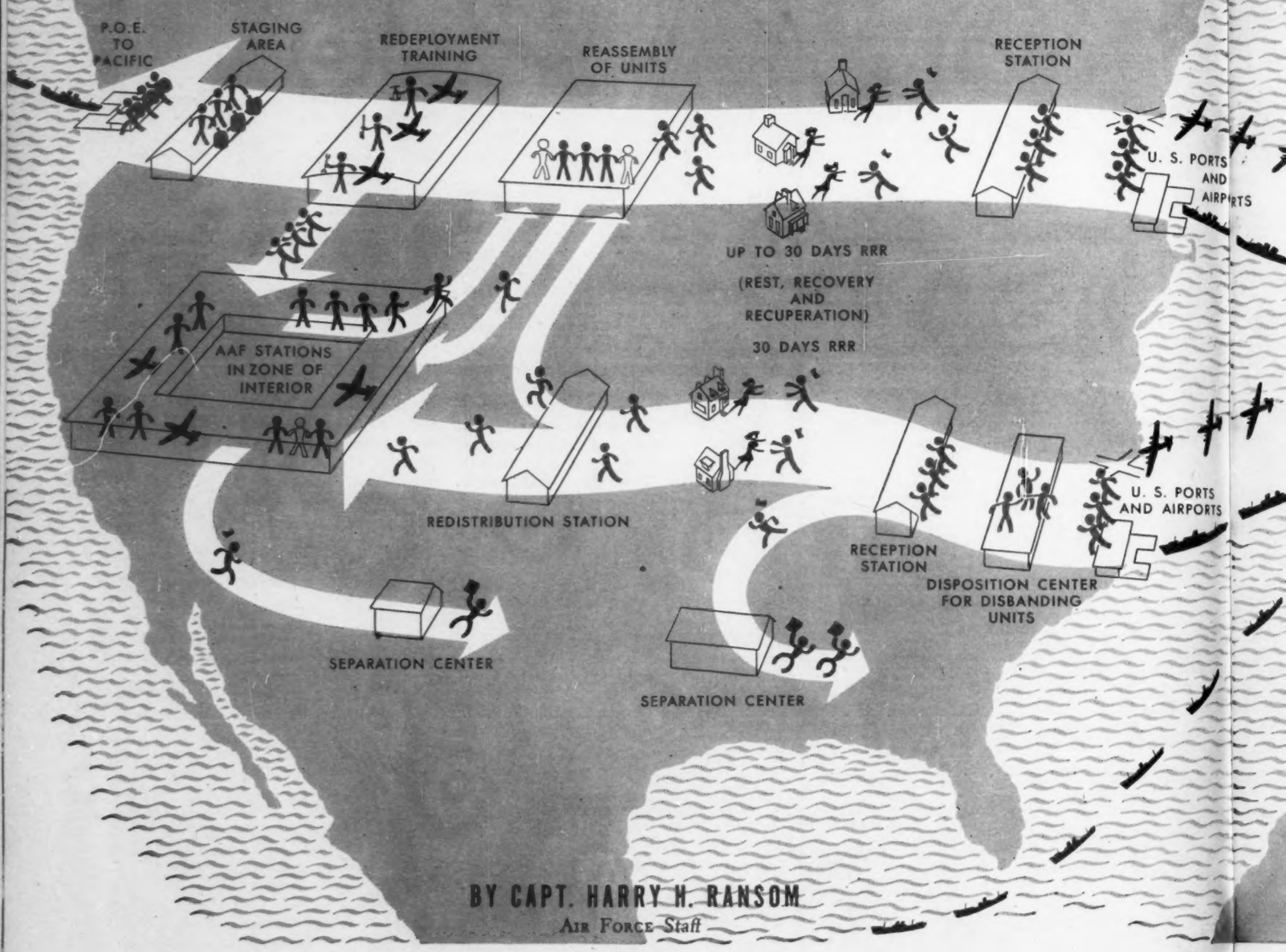
☆

For our two correspondents in Europe, there has been no letdown since V-E Day. Maj. Arthur Gordon, who took time out to do the "Victory in Europe" article last month, is back hard at work on his special assignment of gathering material for a comprehensive analytical appraisal of the AAF's role in the aerial smashing of the Nazis. The results of his survey will appear as a special supplement in a future issue of AIR FORCE. To keep our readers current of AAF events in Europe, Capt. Eric Friedheim is getting the lowdown on the Occupation Air Force. From the famous Munich beer cellar he sent us some hundred-million mark notes, with an apology because he was too late to get Hitler's signature for our Short Snorter.

☆

Back from France is our staff photographer, T/Sgt. Roger Coster (see "POW" Page 44), his formerly tight-fitting uniform draped around him in ample and loose folds. His first mission on arriving back in New York was to put away a big juicy steak. After two days he reported back that he hadn't been able to get close enough to a steak even to take a picture of one. And while on the subject of steaks, Capt. Larry Bachmann (see "Our 30,000-foot Periscopes," Page 7), fresh from the rigors of northern China, reported from Ceylon that he not only was served two-inch steaks, but his hosts were offended if he didn't accept second helpings! We can't understand why he seemed so anxious to get the first available air transportation for the Pacific. ☆

Redeployment in the AAF

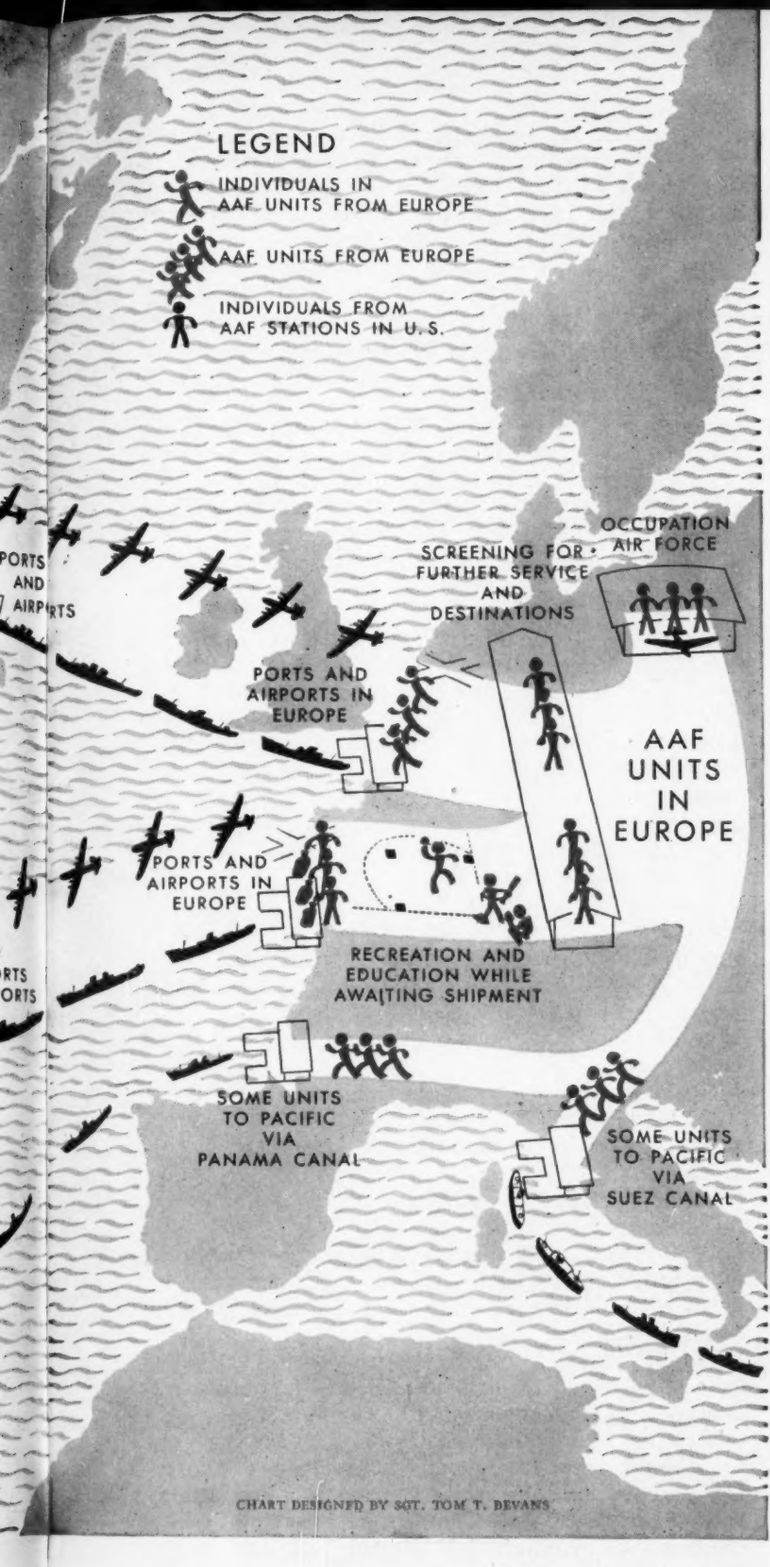


BY CAPT. HARRY H. RANSOM
AIR FORCE Staff

The AAF is on the move. After a trans-Atlantic hop and a period of rest, heavy bombardment groups have already begun retraining in B-29s. Officers and men of Troop Carrier units, only a few hours removed from active duty in Europe, scatter to reception stations in the United States before going home to rest. From the Mediterranean area, service squadrons embark for islands in the Pacific, while supply squadrons in France pack for a trip through the Panama Canal to the Philippines. A few men who on May 12 had interim scores of 85 points or more on their Adjusted Service Rating cards are already in civilian clothes. Non-essential individuals who have the critical number of points are awaiting transfer to Separation Centers. Near posts which they will take up as units of the Occupation Air Force, AAF groups are scheduling furloughs, leaves and passes in Europe before settling down to their OAF jobs. Meanwhile, from the United States, individual replacements and redeployed units move steadily toward the Pacific and the Orient.

At first glance, this world-wide motion is too big to make sense. As the new avalanche of power against Japan gains speed, the conditions of military "readjustment" become clear. The purpose of this article is to discuss some of those conditions and to answer several specific questions as fully as military security and changing circumstances allow.

All the AAF's global changes are focused on the defeat of


LEGEND
INDIVIDUALS IN AAF UNITS FROM EUROPE
AAF UNITS FROM EUROPE
INDIVIDUALS FROM AAF STATIONS IN U. S.
OCCUPATION AIR FORCE
SCREENING FOR FURTHER SERVICE AND DESTINATIONS
PORTS AND AIRPORTS IN EUROPE
AAF UNITS IN EUROPE
PORTS AND AIRPORTS IN EUROPE
RECREATION AND EDUCATION WHILE AWAITING SHIPMENT
SOME UNITS TO PACIFIC VIA PANAMA CANAL
SOME UNITS TO PACIFIC VIA SUEZ CANAL
CHART DESIGNED BY SGT. TOM T. BEVANS

Japan. Even before Germany finally surrendered, a part of the airpower once directed against the Reich began to turn against Nippon. This shift has enlarged the mammoth operations of supply, transportation, and reassignment implied by the AAF's share in the Pacific war.

Two simple principles help to clarify questions about redeployment in the AAF. The first is the clear purpose of all the armed forces to defeat Japan completely, quickly, and with as few casualties as possible. Second, and inseparable from this purpose, is the fact that military necessity must dictate every step of redeployment. Convenience does not enter into the plan, although the claims of individuals will be considered when military necessity permits.

Its objective is to bring the entire weight of U. S. airpower to bear against Japan. . . . Here are some answers to the how and why of the program

The aim of redeployment is to get into position all the men and weapons necessary for the final blows against Japan. The AAF's new Troop Basis—that is, its share in the responsibility for providing an Army of about 6,968,000 men for the Pacific war—has been established. The disposition of the new air order of battle has begun.

Apart from mere totals, there is an immediate need for particular types of units to reduce Japan's ability to resist. These units were the first to get movement orders to the Pacific. Many are going direct. Some are being flown to their new posts; others are moving as rapidly as possible by water.

The military necessity which dictates the speed of their transfer is obvious: new airbases must be built and put into operation before tactical units can go to work in the Pacific. When swift movement has prevented some of their personnel who are eligible for release from being "screened" in Europe those men will be returned to the United States from the new theater as soon as possible.

For several weeks, reorganization has been going on among AAF units in Europe. Essential units to be redeployed through the United States to the Pacific have been chosen. The sick and wounded, regardless of their former assignments, are being moved to the United States as fast as their physical welfare will permit. Recovered prisoners of war, escapees, and evadees have also been given high priority for transportation to the United States. Whenever possible, men with highest ASR scores have already been transferred to organizations destined for the United States and demobilization. Men with somewhat lower scores, including some who served in both the African and European campaigns, are being assigned to units of the Occupation Air Force.

At European stations and at both air and water ports of embarkation, everything possible is being done to assure simplified processing of those who return to the United States. According to necessary priorities, transportation is being made available as fast as possible in view of the tremendous mileage involved.

From United States ports of debarkation, personnel of redeployed units will move to reception stations chosen before they left Europe. After brief processing, they will be granted a rest period up to 30 days, will reassemble as a unit and begin preparation for their new assignment overseas.

Concerning the free time allowed men before they assume new duties, several points are worth noting. First, this period—called "R, R, and R" for recuperation, rehabilitation, and recovery—will not be included in annual leave or furlough. Second, it can be spent anywhere in the United States. Third, the Army pays for transportation to and from a single destination; side trips taken during this period are at the individual's expense.

The second type of unit—coming to the United States for inactivation or demobilization—will move to a disposition center in the U. S., where unit records and property will be turned in. Then personnel of the disbanded unit will

move to reception centers, where essentiality of individuals will be finally determined. Non-essential men will go immediately to separation centers and into civilian life. Those declared essential will be granted RRR up to 30 days before entering their new assignments. Although processing has been simplified, transportation of these units to the United States is likely to be much slower than that of redeployed organizations.

Redeployment training, which will follow leaves and furloughs for those bound overseas, must be varied. Some units flying the same type of plane which they used against the Germans will be ready for quick transfer to the Japanese front. Others will enter thorough retraining. Crews and ground personnel transferred to the very heavy bombardment program, for example, will pick up additional personnel and learn new techniques.

During redeployment three points of reorganization and training will be emphasized. First, group and squadron "teams" will be kept together if possible. Second, men inexperienced in combat will not form green units; they will go as replacements in groups built around seasoned cadres. Finally, although training "on the spot" in the theater will continue to be part of the AAF's plan, every group will leave the United States trained and equipped for combat.

As for officers and men moving as individuals,—casuals they are called—they will be formed into reception station groups. Their essentiality having been finally determined at the reception station in the U. S., they will go to separation centers or be granted RRR before their return to new duty assignments.

What about "those who wait" in Europe? Delays in transportation will keep a large number even of those eligible for release; their wait, the War Department has announced, may last several months. Many of the men who have had long and hazardous combat were brought by air to European ports of embarkation. Every month the ATC, with the help of the TCC, will lift a total of 50,000 men. Aircrews of many tactical aircraft are flying their own planes back to the United States. More than 1,600 ships will be engaged in the Transportation Corps' general operations of moving men and supplies. Yet military necessity makes a slow calendar; even at the fastest possible rate of water and air transportation some men must spend a long interval in Europe before coming to the United States.

Among those waiting in Europe will be a balanced combination of units forming the Occupation Air Force. Part of an army of about 400,000, this force will cooperate with the British, Russian, and French air arms in maintaining order. Its members, most of whom will have relatively low ASR scores, will carry on a program similar to that of other air forces in inactive theaters. Necessary as its job is, the OAF repeats the question heard throughout the AAF in Europe, "When do we go home?" That time—at least for the majority—is likely to be delayed until after Japan's surrender.

Apart from their military responsibilities, members of the AAF who are detained in Europe will have the advantage of extensive education, recreation, and travel programs. For example, a typical fighter base has already set up a unit school offering courses in Business Arithmetic, French, American Government, Livestock Production—subjects for which prospective students voted. Instructors have been chosen, texts collected, and a counseling system for obtaining high school and college credit established. Individual courses are limited to two months, and in no case will a man's return home be delayed by the program.

In addition to unit schools, Technical Training Centers for specialized study and Army University Centers for advanced students are being planned. Supplementing this more formal instruction, tours to many important European centers will be conducted for all Army personnel. At first, the range and variety of these tours will be limited by lack of transportation facilities; later they will be extended.

Sports and hobbies are being organized at all AAF stations in Europe. Like courses of study, these activities are being selected by the men. Generally, the program will be informal, but there are plans for larger tournaments and stadium games.

* * *

Specific questions about individual prospects during the redeployment period are often unanswerable. Some of the most common inquiries are set down here. For the present, security restricts the details of the answers, and time will, of course, change many of these conditions.

1. *Are AAF units in the Pacific included in the total of the 1,332,000 men eligible for discharge during the coming year?*
   The answer is an emphatic yes. In round figures the War Department has divided the eligibility totals as follows: Europe, 650,000; Pacific and Orient, 433,000; United States, 249,000. The rotation program for the Pacific and Orient will also continue. For both systems, rotation and demobilization, Germany's surrender means more replacements for men fighting the Japanese.
2. *Can an enlisted man in a theater of operations or in the United States waive his right to release under the Adjusted Service Rating?*
   This can be done—and it has been done by men with scores above 150. On the other hand, a man should be sure of himself before he makes this decision.
3. *Is the Distinguished Unit Citation counted in the ASR score?*
   This award is not included among those for which point credit is given.
4. *What is the rule for release of married Wacs?*
   A member of the WAC whose husband is released from service is eligible for release herself, regardless of ASR score.
5. *Will the discharge of enlisted men over 40 years old be continued?*
   Redeployment has had no effect on this practice; such men can still be released.
6. *What is the AAF's general policy concerning the release of officers?*
   In all the armed forces, the decisive factor in the release or retention of an officer is "military necessity." Officers who are commissioned in the Air Corps (AUS or Reserve) and who are not required by the AAF can be released immediately unless they have a Military Occupational Specialty which appears on a very limited "critical shortage" list. Officers who are commissioned in other arms or services and who are currently assigned to the AAF but are surplus to its needs must be referred to the major force having jurisdiction over the arm or service in which they were commissioned. If they are non-essential to that force, they will be released. If they are essential, they will be transferred to a unit in the force needing their services. In the consideration of an individual officer's case for release, three points besides the need for his services will be considered: (a) his Adjusted Service Rating score, (b) his desire for release or retention, and (c) his usefulness to the Army as indicated by his efficiency index. A survey of AAF officers covering these points is being completed.
7. *Can a pilot returned from a combat theater be con-*

(Continued on Page 26)

Our 30,000-foot Periscopes

BY CAPT. [illegible] BUCHMANN
AIR FORCE Overseas Staff

These Photo B-29s are expert at putting Jap shipping "on the spot" for our Navy

It was a routine mission. The photo B-29 (F-13) was on a reconnaissance assignment over the southern islands of Japan. Its job was to photograph various military and naval installations. As the plane came within sight of Hiroshima in the Jap Inland Sea, the crew spotted more of the Japanese Navy than they had ever seen except in photographs.

It was one of the juiciest photo-reconnaissance targets of the war, but the F-13 was unable to get photographs. The plane was so low that any attempt to get within camera range would expose it to the extremely accurate and heavy flak batteries of the enemy warships; it couldn't go any higher because its engines were giving turbo surges instead of power. The pilot, Capt. Alvin Coe, had been instructed not to break radio silence under any circumstances. Only by returning immediately to his China base could he get information on this important target through to headquarters in time to be of any use.

The flight engineer, forced to put on high power settings requiring high fuel consumption, reported that there wasn't enough gasoline to get the plane back to its original base. The pilot headed for an advanced emergency field.

The weather closed in, and Coe flew in an overcast most of the way. A sudden break in the clouds revealed Jap-held Nanking only 5,000 feet below, but the hole closed up before the AA fire started. Then information was received that the forward field was socked in. Bomb bay tanks were dropped, and a "skin of the teeth" landing made at the next advanced field, where the information was flashed to headquarters.

The sequel came on March 21, 1945, when Fleet Admiral Chester Nimitz announced that an American carrier task force had destroyed or damaged half of the Japanese fleet at the spot where Coe's plane had located it.

The above is an exceptional case, for wherever possible these lone B-29 photo planes fly at high altitudes, 30,000 feet and up.

In carrying out assignments for both General MacArthur and Admiral Nimitz, F-13s of the 20th Bomber Command's Photo-reconnaissance Detachment have operated over northern China, Manchuria, the China Sea, the Philippines, and Japan itself. In October, 1944, both the Army and the Navy requested reconnaissance information for maps of the northern coast of the Philippines, with particular emphasis on Lingayen Gulf. The Superforts mapped the specified area, returned to their China bases where their photographs were developed and flown immediately to the proper Army and Navy headquarters in the Pacific. It wasn't until January 1945, with news of our Luzon landings, that the importance of this assignment was realized.

During the subsequent Luzon campaign, these F-13s were assigned to continual reconnaissance of Kyushu Island, the southernmost in the Jap home chain, and the staging area for all enemy aircraft shuttled down to the Philippines. The specific task was to provide photographs from which actual counts could be made of the number of enemy airplanes on the various Jap fields.

On Kyushu, the photo men discovered 22 new airfields and relocated 10 others. But their most important work was in what they did not find: intensive coverage proved that 5 airfields which were on our maps actually did not exist.

During the middle of March, the Navy put in a special request for the F-13s. Another important landing was to take place, and it was necessary to make regular reconnaissance runs over the East China Sea. The task was to look for what was left of the Jap fleet so that our Navy could prevent it from hampering our latest real estate venture in the Pacific. Daily missions found some small portions of the Jap Navy and considerable merchant shipping. From the information provided by the F-13s, our submarines hunted out these remaining elements of the Nip fleet.

The payoff came on March 25 when a Navy task force hit Okinawa in preparation for our landings a week later.

The F-13s of the 20th Bomber Command Photo-reconnaissance Detachment are now operating far ahead of the war. As the Army and Navy carry out combined Pacific operations, an important assignment of these long range photo planes is to secure data pertinent to future landings.

Ever since photographic planes came into use, they have been called the "eyes of the AAF." The Navy has another name for them—they refer to these high flying F-13s as "our 30,000 foot periscopes." ☆

With the invasion of Okinawa, a new type of ATC unit received its baptism of fire

Air Transport Commandos

By Maj. Milton R. Krims

AIR FORCE *Overseas Staff*

A tiny black dot moves across the sky. The dot grows into a huge, shining C-54. It makes a perfect landing, throwing up clouds of dust, and a man wearing gun and helmet waves it toward a large, shell-shaped revetment. The pilot cuts his engines and hears the rumble of not too distant artillery. Meanwhile, the doors are opened and heavily armed men grin up at the new arrivals, and one of them shouts, "You should have been here when it was *really* rough."

Everyone laughs, because the wisecracker had set foot on Okinawa only an hour before, having arrived in the first ATC plane to land. This newcomer was the second. The time: 8 April, 1945—seven days after L Day.

After the one brief pleasantry, the men get to work. No time can be lost getting the unarmed C-54 back into the air again and on its way back to a rear base. Sixteen litter cases are loaded into the plane. They have to be carried up steps as the fork lift has not yet been assembled. Then the walking wounded, a few high priority passengers, some mail . . . and at the last moment, a new enemy weapon that must be speeded to Washington for technical examination. In exactly one hour and forty-five minutes, the big C-54 is taxiing toward the strip for a take-off.

These first two ATC planes had also brought their priority cargoes into Okinawa: key ATC personnel, a 250-gallon water truck, a baby bulldozer, two jeeps and a trailer, a fork lift and an airborne tractor. ATC was ready to go into business. Already they had a sign up on Yontan airstrip: AIR TRANSPORT COMMAND WELCOMES YOU TO OKINAWA, PARADISE OF THE PACIFIC, EVERY DAY A FOURTH OF JULY.

Planning for the Okinawa invasion began in the fall of 1944. From the very first it included participation by ATC. By the end of January, the Pacific Division was ready to proceed with its own plans for active participation. A new type of ATC unit was born at Hickam Field, Hawaii. Of the twenty men who made up this advance unit, under Lt. Col. James W. Luker, all were in overseas service . . . and all had volunteered for this special assignment. They had no idea where they were going but they did know it was into a forward area. They kidded each other, called themselves the Air Transport Commandos.

On March 6th, the entire unit moved to the Marianas, and on March 10th it was activated as an AAF Base Unit. At that time it consisted of 65 men, the nucleus of an eventually much larger organization.

For the first time in ATC history, its men received intensive combat training. They labored through the usual field exercises, learned about chemical warfare, tent pitching, carbines and machine guns. They had target practice, took long hikes with full packs, generally toughened up. In the evening, they listened to lectures on cargo handling, aircraft maintenance, advance base conditions. They were lectured on first aid, care of the body. And still they didn't have the slightest idea where they were going.

Came April 1st, and the news of the Okinawa invasion. They listened tensely to the radio, speculated excitedly. On April 7th they were up and out at 0030 for a ten-mile hike. They returned hot and tired. But for the nineteen men of the advance cadre there was no rest. They were ordered to pack for an 0300 takeoff . . . their destination: Okinawa Shima.

Along with the task force that invaded Okinawa was an ATC representative, Col. Luker. His instructions were to have Yontan Field ready to receive the first C-54 on L plus five. Heavy casualties were expected,

Above. Lt. Col. James W. Luker, head of Okinawa's ATC, is on hand to meet evac planes as they roll in on schedule. Pretty flight nurse joins him in a big smile for photographer.

Left. ATC brings in engines, vital plane parts. Here, fresh engine is trucked to Superfort that made emergency landing.

Above. Fork lift raises walking wounded to C-54's door. Other wounded wait their turn.

Left. The wounded felt a little better as soon as they saw Flight Nurse Georgia O. Doxie, tall stately brunette, step out of an evacuation plane.

Above. Fighter pilots just returned from missions read sad news of President Roosevelt's death in newspapers brought in by ATC transports that also carried mail.

Below. In this Jap-built revetment, ATC set up its office, covered entrance with wall of sandbags. Wounded were kept in revetment until picked up by planes

Above. Replacement troops climb down from C-54 that flew them into Okinawa. This plane will evacuate wounded.

Right. Soldier wounded in foot and left hand is gently helped to C-54's door.

and it was up to ATC and its Air Evacuation Units to help get them out.

Colonel Luker, working in close collaboration with representatives of the Tenth Army and the Aviation Engineers, immediately inspected the two airfields, Katena and Yontan, chose Yontan. The long strip was practically undamaged, there were plenty of Jap-built revetments to provide cover for both wounded and personnel during air raids and artillery shelling. Every move was considered from the viewpoint of enemy action, strip maintenance, communications, parking and handling of patients. ATC opened its office in a revetment.

Yontan was ready on L plus five, but Tenth Army made no request until two days later. The message from Comfor Area received April 7th, stated simply that 10th Army requested commencement of transport service to Yontan Field, Okinawa Shima. The first C-54 would depart 8 April at 0200, the second at 0400.

Because Okinawa time was one hour earlier than Guam, it was decided to change the time of departure to 0300 and 0500. Other last minute changes were made; 1000 pounds of mail was added and each airplane carried enough gas for the round trip. The rest of the cargo consisted of ATC personnel and equipment.

The first thing arrivals on the first plane did was set up four pyramidal tents to cover the supplies. Then a party went down to the beach to scrounge K rations and additional water. Others got to work assembling the fork lift and other necessary equipment. Still others searched for bomb proof shelters, got themselves set up in the Jap revetments. It was a busy afternoon; they could hear the artillery only a few miles to the south, they could see the swarms of fighters hurrying to and from the not too distant targets. And as they worked, they carried pistols and carbines and seldom left helmets out of reach. They knew they must work fast because the Japs would come visiting any time.

Sure enough, the sirens wailed a red alert at 1900. They scrambled to the shelters, but there was no attack, and an hour later the sirens sounded the all clear. Certainly they were grateful because none had had any sleep since 0230 the day before. They crawled into their cots, were soon out again searching for more blankets. It was cold on Okinawa.

At 0400 all hell broke loose over Yontan Field. It seemed that every gun within a radius of five miles started shooting at the same time. The sky was a spider web of red tracers. They fell out of bed, jumped under their helmets, furtively peeked out to watch as seven Jap fighters were shot down. It was their first taste of combat, and when it was over they climbed into the sack feeling like veterans and prepared now to sleep away the rest of the night.

At 0600 the sirens bounced them out of bed again. Nothing happened except that they were annoyed. The Japs were getting to be pests. And tomorrow—no—today was another work day regardless of their loss of sleep—more transport planes would be coming in a few hours and have to be serviced.

The planes came in on schedule, one at 0930, the other at 1135. They left in a few minutes over an hour after arrival, each carrying 28 litter cases plus walking wounded and mail.

The big C-54s continued to come in and depart on schedule. The men serviced them as best they could with what facilities they had. The medics cared for the patients with gentleness and efficiency. Customers lined up to present orders, be assigned priorities and space on outgoing airplanes. And even as at Hamilton, Biak, Paris, Calcutta or Guam, passengers huddled together to sweat out rides and gripe about having to be in Washington or New York or Sydney practically the day before yesterday.

And yet it was different. There was always the distant thunder of artillery, the roar of fighters hurrying somewhere. And there were the passing vehicles of active war and the ambulances carrying the wounded. Everyone, including the passengers, carried weapons and wore or carried helmets. And while they waited, they wandered through the ruins of a nearby Okinawa village, marvelled at the magnificent masonry of the stone walls and the graceful curves of the tiled roofs, admired the finely lacquered trays and low tables and even gaped at the kind of dishes you used to see at Little Tokyo's Oriental Bazaar at home . . . and wouldn't buy for a dime a dozen. And always the dust was like a fine blizzard caking everyone and everything with a gray-tan patina.

At 0200 the morning of the twelfth, the siren sounded the warning of what turned out to be the biggest raid yet. Nineteen Jap aircraft were shot down before the all clear sounded two hours and forty minutes later. The men returned to their tents, ready for sleep. Twenty minutes later there was a loud explosion less than a hundred yards from the center of their area. Several of them were knocked out of their beds, badly shaken. Two passengers waiting to go out on the morning plane were injured, one seriously. From out of the darkness came anxious calls for ambulances, medical assistance. The explosions continued; they were being shelled by a Jap 105 dual purpose battery. At 0630

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Tired, dirty, wounded, these soldiers, brought back from the front lines on Okinawa, wait patiently for ATC planes that will fly them out.

When the Mustangs came in for close air-ground coordination in Luzon, the doughfeet cheered from their foxholes

THE INFANTRY LOVES IT

BY CAPT. JOHN E. RHODE

Support Aircraft Controller, 5th Air Force

ILLUSTRATED BY SGT. LOUIS S. GLANZMAN

We are situated on a rise of a hill in Luzon, overlooking the Jap front line. Our radio-equipped jeep is at the foot of the hill and beside us is a field telephone. From our foxholes, dug on the very top of the hill, we can see the Japs at their guns, covered with weeds. From time to time we see the weeds rise, a gun muzzle push itself out, and a flash of fire. Occasionally, the rear extremities of a careless Jap, or a leaf-covered helmet can be distinguished as the little men creep among their dugouts.

A distance of 600 yards separates us from the Japs, but there is a valley in between and the situation is stalemated. If we advance now, we will get machine gun fire full in the face. If we try to steal up the steep sides of the opposite hill, Jap snipers, who have a habit of appearing out of nowhere, will have things too much their way.

H-hour this morning is 0900. Our artillery is already beginning to pound the enemy on the frontal slope. The air is thick with whistling shells. Dirt and dust are flying everywhere. From the rear, we can hear the drone of tank engines and, now and then, the boom of the big guns behind the infantry.

We know it is time for the show to begin, and also time to call in our planes for close air coordination with the ground troops. We pick up the field telephone and call "Red Leader," code word for the commander of our already

airborne fighters. We identify our aircraft controller station as "Rhinestone." Nothing but a crackling sound responds. We repeat, "Rhinestone calling Red Leader. Come in, please. Over." Still nothing.

As we wait for a reply, we wonder if the P-51s will be on time. This split-second timing is a ticklish business, the worry of keeping our fighters from strafing our own troops.

Still no contact with Red Leader. One last look around, a final check. We can see our front line and the big white panels indicating our forward positions. There is one off to the left, two on our right, and two more in front of us and a little below. Just behind and a little above us is a big white arrow pointing to the opposite hill, today's objective.

We make a check with the artillery. "Artillery from aircraft controller. Are you ready? Over." The answer comes promptly. "Ready for your instructions. Over."

That means the artillery will have smoke shells set to put the finger on our Jap neighbors as a guide to the fighter planes.

Five minutes to go. Where the hell are those P-51s? Another call.

"Rhinestone to Red Leader. Come in. Come in. Over." This time we make contact.

"Red Leader to Rhinestone; Roger. What are your instructions?" The curtain is ready to go up. One more look around before we give the fighters their first instructions. Then, "Rhinestone to Red Leader. Orbit off to the west, and I'll silence artillery to clear the target for you."

Artillery is told that the planes are heading in. The guns are to fire only white phosphorus to mark the target. Another peek over the edge of our foxhole at the Jap lines. All quiet. "Red Leader from Rhinestone. Do you know your target? Have you the correct photos? Do you want any further instructions?"

"Rhinestone from Red Leader. We know the target; we have the correct photos, and will follow your instructions. We are orbiting west of target area and have it spotted."

"Rhinestone to Red Leader; good boy. Artillery will mark the target with smoke in two minutes. Target is at three o'clock from your present position. Will you make a dummy run over the bald spot on the hill, directly opposite the white arrow marker? Trajectile path is south to north at your present altitude and position. You are clear of this path."

"Roger from Red Leader; we understand."

"Artillery from aircraft controller; planes are ready for you to mark the target."

"Back to aircraft controller from artillery. Smoke is on the way. Will be on the target in 60 seconds."

"Rhinestone to Red Leader, your target will be smoked in 50 seconds. Do you have it? Forty seconds, thirty . . . twenty . . . ten . . . there it is Red Leader. Do you see it, Red Leader? Right over there on the eastern slope."

"Roger. We see it."

"Back to Red Leader. There are heavy machine guns, caves and dugouts in that area. The wooden spot 100 yards west has a battalion of Nips. Behind the hill are mortar positions. You are to attack and destroy them. The target is all yours. Go get 'em."

We listen in as Red Leader instructs his planes:

"Red Leader to Red One, first flight will attack after me. I'll make a dummy run to be sure of the target and have Rhinestone give me an OK on the spot."

The Japs know what is going on, and their tracers start coming up from their positions. This fire further defines the target for us. Red Leader dives in at 400 miles an hour and the P-51s buzz the target right in the face of the fire.

"Hello, Rhinestone, was that the right area? Lousy shots, aren't they?"

"Rhinestone to Red Leader. Roger Dodger, old fellow. That's the spot. Drop 'em there and you'll bring home the kewpie doll."

"The infantry boys, with smiles on their unshaven faces."

Again we listen in as Red Leader instructs the other pilots:

"Red Leader to Red One. Four planes will attack the target. Follow me in and I'll mark it with the first bomb. Then give 'em hell, gang."

"Roger, Joe. I'm right behind you, with Jones, Burke and Smith."

"OK, fellows let's go. Give 'em the works."

The bombs whiz in. Smoke, dust, guns and parts of Japs are flying through the air.

"Red Leader to Red Two and Three. All right, boys, follow our tail and put it where they like it the least."

The next two flights of P-51s follow in and drop their bombs on either side of the first flight's area. The air is red. Then there are clouds of white and yellow smoke, with black specks turning lazy loops in the center of it. Noise and concussion is incessant. The infantry boys are on their elbows with big smiles on their dirty unshaven faces. They are shouting, but the thunder of bursting bombs drowns them out.

The Japs are breaking and running around like bewildered monkeys. Some of them are just lying there like burst bags of rice; others are crouching in their foxholes dazed and wondering, perhaps, why their own air force doesn't come.

"This is Red Leader to Rhinestone. Last run coming up."

"Roger, Red Leader; swell job. All the bombs right in the pot. Good work. Good work. The infantry is cheering like mad down here."

"Roger, Rhinestone. Tell the boys we'll be up tomorrow and to save us some souvenirs."

(Continued on Page 56)

Half-buried in its revetment with camouflage draped like crepe on its tail, this ME262 jet was one of many planes abandoned by Nazis.

Near Berchtesgaden, Hitler maintained a field well-stocked with planes, presumably to be used for a quick getaway. But the Allied Air Forces struck fast, shattered the field and Hitler's escape hopes

P-47 buzzes debris that was Hitler's palatial Berchtesgaden home.

Swastika-marked American B-24 had become a part of Luftwaffe.

JU290, probably Hitler's private plane, stands over ME109.

ILLUSTRATED BY SGT. LOUIS S. GLANZMAN

"Divine Wind" Blows Nobody Good. Suicide has always been incidental to warfare. It is not an Oriental phenomenon. With different motives, the conquered Roman who fell upon his sword and the Anglo-Saxon warrior who refused to outlive his chief chose this mode of death. In modern combat, pilots of all nations have occasionally plunged hopelessly damaged planes into an attack that would make their own deaths more costly to the enemy. In Japanese warfare, however, suicide is not occasional. Having formalized self-destruction by hari-kari, the Japanese translated the principle into aerial tactics. "Kamikaze" pilots, boasting the name of the tempest which is supposed to have saved their homeland from Kubla Khan in 1281, are moved by something besides heroic inspiration or patriotic metaphor (See "This Is Your Enemy," AIR FORCE for April).

The Kamikaze program can be measured by several yardsticks. Logistics for the plan are simple; suicide planes are cheap and easy to build. As for training, the Japanese originally announced that suicide missions required only brief instruction. Jap pilots could have told the propagandists that hitting the air is one thing and hitting a target quite another. Even a battleship or a B-29 formation is not big enough for a rank amateur. A third advantage that the Japanese expected was purely psychological. They hoped to terrify the Allies, "who believe in conserving human life and will therefore not comprehend mass suicide attacks."

Organized Kamikaze operations began last autumn, during the landings at Leyte. By January, when the fleet moved into Lingayen Gulf, the program had been stepped up. Principal targets were ships and bomber formations. Chief instruments were piloted Baka ("Folly") bombs, the variant suicide plane-bomb named The Viper, and ordinary run-of-the-line planes. The special suicide craft arm their explosives at the instant of release from the parent plane; so the pilot has little chance of survival.

To whip up home-front enthusiasm for the "Divine Wind" pilots, the propagandists have carried on a long campaign. In addition to popular acclaim, the suicide flyer was offered better living quarters, better food, and high military courtesies, including a funereal take-off on his final mission. Lately infected with a desperate haste, the program has cut down this etiquette of suicide. Pilots are still guaranteed two promotions, both posthumous.

This grim business has not been underestimated by the Allies. Any suicide attack may be damaging. Even if one out of every hundred Kamikaze dives and glides were completely successful, however, the meager results of the other 99 would cost the Japanese too much. Mere flesh, blood, Baka bombs or Vipers cannot do the work of that Kamikaze that blew in 1281.

Pink Light from Below. From the ground, the Japanese view of the war is glum. Domei's correspondent in Tokyo has described a B-29 fire mission from the underside. "The storm of fire caused by incendiaries swept whole districts," he writes. "That bright starlit night will remain in the memories of all who witnessed it. After the first incendiaries fell, clouds formed and reflected the pink light from below. The Superfortresses flew unbelievably low over the central fires which spread gradually. One B-29 flamed like a tracer bullet above the city. . . . The Diet building stood black against the sky. That night we thought all Tokyo had been reduced to ashes. If the enemy imagines, however, that he can crush the Japanese people, he has made a big mistake. The Emperor deigned to visit the stricken areas. He went on foot, exposing himself to the cold wind."

People's War. As a god, Emperor Hirohito is immune from political upheaval. Yet restlessness inside Japan is increasing. Suzuki is no more free of critics than his predecessors. "Reorganize the Government!" "Give us a Stalin!" "Quit talking about peace." This is the newspaper chorus. The most thorough change resulting from the new government's policies was reorganization of the "party" named the Imperial Rule Assistance Political Society. Last month it closed its books. In its place Japan has a People's Volunteer Corps. Incorporating all the political auxiliaries it will be the Combat Corps in case of invasion. To assist its work, the Minister of Education has mustered all Japanese students. Farmers are signing up in a new Agrarian Militia.

THIS ~~IS~~ WAS YOUR ENEMY

notes for an epitaph

What's in a Name? They called it the Luftwaffe. It was ten years and two months old when it came to an end in May, 1945. Six years of growth and uncertain conquest and four of gradual disintegration and defeat were the sum of its official history. At the finish, this former scourge of Europe had lost its fearsomeness. The terror-striking Stuka force was gone. The Focke-Wulfs and Messerschmitts that had borne the brunt of Allied attack were outmoded now, outnumbered, and outfought. Supplies of fuel and ammunition had dwindled. Even the exciting promise of a jet-propelled force of ME262s and AR234s was still only a promise. Many evidences of former power remained, but the enemies of the German air arm had long since surpassed it.

At the start, the GAF had been called the "Luftwaffe" to signify that it was an "air weapon" for attack. Yet the last aerial offensive device of the Wehrmacht was named for Vengeance. The Vergeltungswaffen—both V-1 and V-2—were signs that the most arrogant of air forces had descended from plans of world conquest to blind retaliation.

By May, 1945, the withering rolls of the Luftwaffe had lost the convincing echoes of the earlier German air roster —von Boelcke, von Richtofen, and Immelmann. The Luftwaffe's curtain speeches were spoken by Goering, who reported that his Leader had sentenced him to death; by Kesselring, whose malevolent talents had brought him an odd kind of fame; by Stumpf, to whom fell the dubious distinction of signing the Luftwaffe into oblivion.

The Roots Went Deep. The branches of what Hitler once called the "mighty tree" were lopped, but the Luftwaffe's roots struck far back into the years of peace. Defeat did not tear all of them up and into sight. From the days of Lilienthal's experiments and the earliest German enthusiasms for getting off the ground, down through the period in the first world war when Fokkers were the most dreaded plane on the Western Front, the traditions of German aviation were distinguished, and not ungallant.

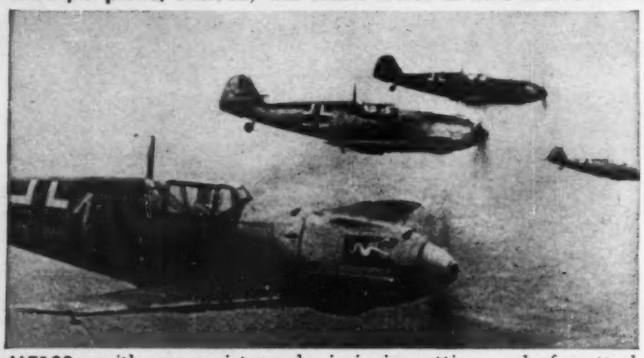
In the waiting time of peace, German air activity sprouted everywhere in glider clubs and in the innocent sounding DLV, or Deutsche Luftsportverband. Popular enthusiasm for "air sport" joined with shrewd nationalism to make a scant allowance of 36 flyers suffice for the entire Wehrmacht training program—by the simple device of rotating the flyers engaged in this private sport. Under the tutelage of General Milch, canny business sense expanded Lufthansa, the commercial airline, into a training ground for the secret Luftwaffe.

To many an individual contribution the Luftwaffe grew indebted—to the brilliant designs of Willi Messerschmitt, to the painstaking experiments of Drs. Dornier and Junkers, to the swashbuckling airmanship of Ernst Udet, a better artist than Hitler and a better pilot than Goering. Other names which were to sound through the operations of a second world war were heard in German flying circles in those days. The team of Focke and Wulf had produced the FW56A and enrolled an assistant named Kurt Tank, who was to give the Luftwaffe one of its last 1944 models, the TA154. Dr. Heinkel, too, was busy; HE70 had been produced and HE111 was on the boards.

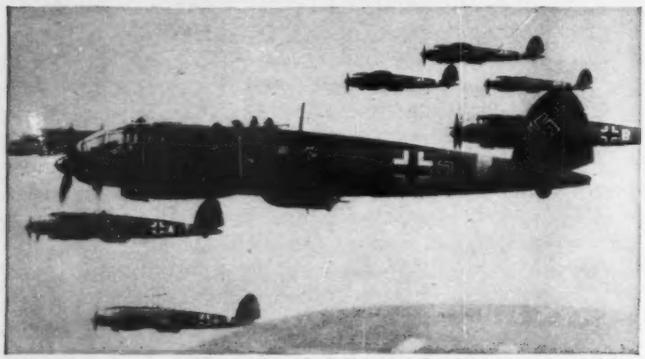
When March, 1935, brought the Luftwaffe into the open, Hitler chose Goering to command it. Not the least reason was that Goering had been one of the German pilots

German pick-a-back plane was operated by pilot in ME109 who released bomb-laden JU88 over target, directed it by radio to its mark.

Nazi jet plane, ME262, was found intact at field near Stendal.



ME109s, with appropriate snake insignia, getting ready for attack.



HE 111s roar over Channel with full bomb loads during 1940 blitz.

who refused to surrender in the first world war. Other die-hards had fought their way on up through Latvia or disappeared into South America to fly dangerous hinterland routes. More practical, Goering had remained in Germany to become Minister of Air Transport. When he moved into the Luftwaffe command, he was accompanied by strong assistants, including Stumpf, of the General Staff, and Kesselring, who headed Administration. Then came the period which newspaper readers considered mainly one of panoply and display—such as party rallies over which 400 aircraft flew. A few of those readers lingered over the speed records which Messerschmitts were setting in air trials. Still fewer remarked the maneuvers in which the Luftwaffe practiced cooperation with the Army. Meanwhile, the businessmen were not idle; the first budget of the new air regime was jumped from 78 to 210 million marks. Without much irony and with no trepidation, air yearbooks for three years before the war made such entries as, "The new Reich is deeply interested in aviation." That was historic understatement.

Mournful Numbers. In the later years of peace and often after 1939, popular impressions of the Luftwaffe have emphasized numbers. Nazi propagandists played on the fearsomeness of the GAF's mass of fighting planes. All legitimate sounding boards—and some that were not so legitimate—were used to advertise as widely as possible the hugeness of the aircraft reserve. When evidence was needed, a skyful of JU52s served to fill in for first-line bombers, since JU52s had been used for bombing in Spain.

There is no question about Germany's numerical superiority at the beginning of the war. From January, 1939, to September of that year, the GAF's first-line aircraft increased from about 3,000 to about 4,300. From then until Dunkerque, the RAF made no secret of the fact that it was outnumbered. It was not an accident of war or any painless order of events that canceled the Stuka threat, turned back the Luftwaffe from Dunkerque, won the Battle of Britain, defeated the FW190s and ME109s in Africa, and brought the separate tides of aerial warfare into full sweep against Germany during the great European offensives from 1942 to 1945. It was a bitterly fought series of air campaigns. Each was exceedingly costly. There are good reasons, therefore, to speak figuratively of "sweeping the Luftwaffe from the skies."

Yet that is only a mouthful of words if it implies that even in the last months of the war the Luftwaffe had no planes. The GAF's first-line strength remained remarkably steady to the very end. When the United States entered the war, Germany had about 4,000 first-line aircraft; in January, 1943, the strength had increased slightly; by January, 1944, the total was perhaps 5,500; at the beginning of this year it had shrunk to about 5,000. From April 10 to April 18, the 8th Air Force alone claimed almost 2,000 planes of all types destroyed in the air and on the ground —many of them lined up wingtip to wingtip on dispersal fields, out of gas. Altogether, many more German planes were destroyed in the last four months of the war than the entire Luftwaffe had boasted during the globe-shaking advances into Poland and Russia. Outnumbering the Luftwaffe had been only one means to Allied victory.

Nemesis in the Air. There will be no completely logical calendar of Germany's defeat until all the facts about the GAF's strategic planning are known. Meanwhile, there are several glaring facts and several sets of loudly voiced opinions. Without sneering, a French tactician has said that the Luftwaffe fought best when it was not strongly opposed in the air. It is true that the most scintillant of the GAF's successes were the earliest campaigns in cooperation with the Wehrmacht. These initial campaigns rewrote or underscored many theories of the airplane as a flying artillery.

Not even the screaming successes of the first Stukas, however, so impressed the world as the Luftwaffe's experiments in systematic obliteration. Guernica . . . Warsaw . . . Rotterdam . . . Coventry—these were convincing demonstrations of airpower. They also put responsive speed into the Allied preparations for defense and attack. They accomplished no final victories. All that came of those smashing attacks was a series of memorable ruins, an awkward word coinage, "Coventrize," and a grim pun, "Rotterdammerung."

From Russia, Germany had learned an early lesson in the transportation of airborne troops. Before the war the Luftwaffe cooperated with the Wehrmacht in tactics of airborne warfare. The first sign of power came when 2,000 fully armed men were landed in the "peaceful" occupation of Vienna. General Student's 7th Air Division improved upon that trial in the operations which took German airborne troops into Holland, Belgium, and Norway. But it was Operation "Mercury" against Crete in which the Junkers and DFS230 gliders made history. There was no strong opposition from the air, however; when that opposition was provided, Germany's airborne success diminished, ending altogether in the operation in which the ME323s were decimated in the Mediterranean.

(Continued on Page 62)

Air Commodore Frank Whittle, RAF inventor, is credited with first jet engine for fighter aircraft.

An artist's conception of a plane powered by gas turbine. Air enters at intake (1), passes to turbo-jet engine (2), is exhausted at rear of fuselage (3). Other features: pressurized cabin (4), armament in nose (5), electrically operated wing flaps (6), hydraulic ailerons (7).

DRAWING BY R. G. SEIBELSTAD
Courtesy Popular Science

Dr. William F. Durand, NACA's "grand old man" was called from retirement to head NACA jet research work.

Wings for the Gas Turbine

Before jet could become an AAF reality, the problem of a gas turbine unit that would develop sufficient thrust power and operate for long range had to be solved

Col. Donald J. Keirn left his engineering job at Wright Field in June, 1941, and went to England on a hush-hush mission. His orders made rather dull reading—"to determine the desirability of adopting package power plants and to investigate late developments of sleeve valves." But if the colonel wondered why an assignment like this should be top secret, he was to discover, on arrival, that "sleeve valves" were actually the RAF's new jet plane, and that "package power plants" were nothing less than its gas turbine engine which Group Captain (now Air Commodore) Frank Whittle had perfected and which had been successfully flight tested that spring.

About this same time, a telegram was sent from the Washington headquarters of the National Advisory Committee for Aeronautics to the West Coast home of 83-year-old Dr. W. F. Durand. Although retired, the doctor was still regarded as a top authority on gas turbines and jet reaction engines, and the message asked him to return to active duty with the agency he had fathered back in 1915. Without knowing why his services were desired, Dr. Durand immediately complied. Behind closed doors he was told that he would head all NACA research projects related to the jet propulsion of aircraft.

Dr. Durand's first step was to set up a committee for the review of early British reports on the Whittle engine. Next, a secret conference was called with representatives of the Army, Navy and the principal manufacturers of turbines in the U. S. In order to promote as extensive a research program as possible, it was decided that each manufacturer should concentrate his development work on particular types of turbines. Westinghouse and Allis Chalmers, already carrying large Navy contracts, were to work on Navy projects and General Electric was to cooperate with the AAF's development engineers.

To be investigated were the Campini-type gas turbine of Italy, the centrifugal and axial flow types of compressors, the harnessing of hot and cold air jet power, and various combinations of these. The objective of the program was determination of the jet unit which would develop the greatest thrust power and which would operate most efficiently for long range.

Meanwhile Colonel Keirn, in the company of Brig. Gen. Al Lyons, head of the AAF's Air Technical Section in England, was absorbing all available data on jet propulsion and was sending engineering designs back to the States.

In Washington, on Sept. 4, 1941, Bell Aircraft and General Electric engineers were called to Headquarters, AAF, for a special conference in the office of General Arnold.

Also present were Assistant Secretary of War Lovett, General Spaatz, then Chief of Air Staff. General Arnold pulled some preliminary blueprints from his safe, showed them to the manufacturers' engineers, and asked them to design and set up production for the AAF's first jet plane.

With this handful of rough sketches, both manufacturers immediately got to work—Bell on the P-59 airframe and General Electric on the Whittle-type engine. They were all ready for Colonel Keirn when he returned to the United States in October with complete sets of blueprints and a working Whittle engine concealed under improvised floorboards in the bomb bay of his B-24. General Electric set up shop in its old "enamelling" building at Lynn, Mass., and put a staff of 30 supercharger experts to work on the project.

The work was so carefully guarded that when Frank Whittle came to this country in May 1942 he registered at a Boston hotel as Mr. Whitely, had a private telephone line installed and a special waiter and bell captain assigned to his room. He later moved into the home of Mr. R. G. Standerwick, G. E.'s engineer in charge of jet engine development and production and during the three months of his stay in the Standerwick residence, conversation was so cautiously guarded that not even Mrs. Standerwick knew the identity of her house guest or the true nature of his job.

Impeller-compressors for G.E. jet engines are machined to partial completion. Those in foreground have had bucket flanges cut.

After smoothing out many bugs in the production engine, the first successful test run of the Whittle-type G. E. engine finally was made on March 18, 1942. The engine was the same in principle as Whittle's, but many small design changes had been incorporated by General Electric's turbine experts to increase the thrust power and to improve efficiency through use of the turbo-supercharger alloys developed during the past two decades (See "Growing Pains for Jet," June issue of AIR FORCE). Although the AAF was still a long way from production, it did have a successful experimental model of a turbo-jet engine for its proposed jet plane.

Meanwhile, Bell had been developing the AAF's first jet airframe, and by October 1, 1942, the XP-59 twin-jet Aircomet had been shipped to a test base in California, the engine installed, and the plane prepared for its first flight. On this date the jet craft flew to a height of 100 feet (AIR FORCE, March, 1944). Other flights were made to high altitudes at high speeds, but as the small power units of this plane limited its performance to that already attained by conventional aircraft, a larger and more powerful engine was developed by G. E. In June, 1944, this new jet unit flew the Lockheed P-80 for the first time and exceeded 500 mph. It was clearly indicated that the AAF now had potentially the fastest fighter plane in the world. Earlier jet models were relegated to the status of training craft.

The basic idea for the gas turbine was not new. A unit that drove its own compressor by means of chains and gears was patented in 1791 by John Barber, and this device was followed by many others. In fact, nearly every thermodynamicist of note had a brainchild or two along these lines—but all were waiting for the development of a material that would run at high enough temperatures to make the cycle pay its way and have something left over as power. In 1884, Sir Charles Parsons devised the first practical steam turbine and also advocated development of the axial flow compressor, which later was built by Brown, Boveri and Company in Switzerland.

It was in 1922 that this country's first official military interest in jet propulsion for aircraft was expressed when the engineering division of the AAF (then Air Service) at McCook Field (predecessor of Wright Field) requested the Bureau of Standards to investigate the practicability of jet. This study, prepared by Edgar Buckingham, and later published by the NACA, concluded that, "propulsion by the reaction of a simple jet cannot compete, in any respect, with air screw propulsion at such flying speeds as are now in prospect." Such flying speeds were envisioned as 250 mph, and computations indicated that at this speed the jet would take about four times as much fuel per thrust horsepower-hour as the air screw.

Accordingly, further investigations were held in abeyance until fuel consumption of such units could be reduced through increased efficiency of jet engines, or until aircraft speeds were increased enough to justify the high rate of fuel consumption. Eight years later, in 1930, Dr. Adolph Meyer of Brown-Boveri built the first modern gas turbine. Although similar in principle to a prime mover, it was designed merely to drive a compressor that supplied air for supercharged combustion of boiler fuel. Many other successful turbos and gas turbines were developed in several countries during the 1930s, and both Britain and Germany had specialists working on them for application to aircraft.

In the United States, we were attempting to solve the basic high-temperature problems of the turbo-supercharger as a prerequisite to successful and efficient development of the gas turbine as a prime mover, and at length alloys with an operating temperature range between 1,300 degrees F. and 1,700 degrees F. were produced. By 1938, Wright Field was able to lay out a five-year jet program with 1944 set as the goal for the perfection of the gas turbine as a substitute for the conventional reciprocating engine in aircraft. As part of the campaign, Eastman Jacobs constructed the NACA "jeep," an engine-compressor-jet combination, at Langley Field, Va. in 1939. This was the first home-designed jet engine to be successfully demonstrated, and it developed a continuous thrust of 600 pounds. Fuel consumption of the laboratory model was five times greater than that of today's jet engines, but experimental tests later proved useful in solving some of the basic problems of burning fuels at high air velocities.

The major contribution of the Whittle engine was that it proved to skeptical engineers in this country that despite low thermal efficiency and high fuel consumption, the total weight of powerplant installation, plus fuel, was low enough to permit the gas turbine's successful use in aircraft. And when the program culminated in the announcement of the P-80 as a combat fighter with more power than any other aircraft, experts were more than ever convinced that a new concept of aerial warfare had been evolved.

Today, the importance of gas turbine developments is fully recognized, and the AAF is changing much of its thinking from horsepower to thrustpower, from carburetors and pistons to compressors and turbines, from propellers to jet. ☆ —By Maj. Robert V. Guelich, AIR FORCE Staff.

New advanced airfields were needed almost daily to keep pace with the fast moving European campaign after D-day. . . . The selection of suitable sites by aerial reconnaissance proved to be the answer

Engineer - observers and pilot are briefed by CO before Germany mission.

Airfield Below

BY T/SGT. BERNARD M. BOGUE
IX Engineer Command

Since long before V-E day, the AAF has been adding up the lessons it learned from the war in Europe. Some operational methods will be discarded; others will be changed to suit our new war plans; and still others, created as a direct result of on the spot combat conditions, will be developed further and used against the Japs. One of the techniques which surely will be brought to bear in the Japanese war is a recently inaugurated method of selecting sites for airfields by the use of aerial reconnaissance.

Just prior to D-day, Lt. Col. Bernard J. Ashwell, R. E., British Liaison Officer of the IX Engineer Command, and Lt. Col. Quinter P. Gerhardt, AAF Liaison Officer of the command, foresaw the limitations of ground reconnaissance in the event of mile-consuming advances across France. They proposed to Brig. Gen. James B. Newman, Jr., commanding general of the command, that aerial reconnaissance be used to survey and select the sites. General Newman approved the plan and the training of an experimental reconnaissance team was begun. It consisted of a pilot familiar with operational airfield problems, and an engineer officer observer with ground reconnaissance experience, familiarity with airfield construction procedure, and map reading ability.

However, before an observation technique could be perfected, D-day had arrived and the aviation-engineers had begun their huge task of providing airfields on the continent. The first strips in Normandy were found by ground teams moving with infantry forces to sites in half-tracks, doing preliminary survey work and sending the information to command, brigade, or regimental headquarters by radio. Then aviation-engineer personnel would be allotted to begin work on suitable sites.

The ground "recce" system was satisfactory as long as the front was fairly stable, since a ground team could inspect two proposed sites a day and cover 36 square miles of virgin territory. In Normandy, however, this system was seriously complicated by the hedgerows which had to be penetrated before a "sight" could be taken of the centerline on a proposed strip.

The experimental air recce team formed by Colonels

P-38 Droop Snoots, which are used on airfield recon missions into enemy territory, gave necessary maneuverability, visibility and speed.

Gerhardt and Ashwell proved its value at field A-13, west of Bayeux in Normandy. The site had been found and checked by the ground team but the air observer discovered that a church steeple obstructed takeoff and landing from the proposed runway. In addition, the air team discovered a better site for an intersecting runway, one that the ground team had been unable to see. The field at A-13 proved that an experienced eye in the air could save a great deal of valuable time and back breaking labor in airfield construction.

Droop Snoot takes off for daylight low-level aerial reconnaissance to appraise military value of enemy-occupied airfields in Germany.

Three L-4's were then ordered by the command. Meanwhile two more aerial recce teams had been formed and given as much training as time allowed. When St. Lo fell, and the Fourth Armored Division swept south to cut the Brest peninsula, the aviation-engineer L-4s were hard at work. In two days' time the light planes covered more than 800 square miles of territory, almost eight times the area that three ground teams could have covered, even if there had been no Normandy hedgerows to hinder them. Four airfields were built on sites located from the air in that area.

Aerial reconnaissance for airfield sites did not displace the ground teams. It helped utilize them more efficiently since it could be determined from the air when a proposed site was unsuitable for development. Ten to fifteen minutes in the air over an unfavorable site was generally enough definitely to reject it. Over a good site, thirty minutes usually sufficed to draw up a sketch of the layout and make an estimate of the controlling grades and the amount of clearance necessary.

During the months of August and September, the three L-4s flew more than 33,000 miles, covered more than 5,000 square miles in reconnaissance, and found 111 different airfield sites. Out of a total of 43 fields built by the command between the 15th of July and the 30th of November, 21 of the fields were selected from the air.

With the drive to the Rhine, aerial airfield reconnaissance came into maturity. The armies were moving so swiftly that the L-4s literally could not keep up with them, and new tactics were needed. The reconnaissance of airfield sites behind our own lines was still SOP. However, the lines were changing quickly, and in many cases, construction work had been slowed by either frozen ground or seas of mud, so that front-line fighter-bomber bases were likely to become rear-echelon stations before their completion. In addition, it was evident that infantry troops would soon be capturing German airdromes that might be used by American planes.

The operations section of the command needed up-to-date information on these German occupied airfields. In what condition were they? How long were the runways? What surfacing did they have? How many, and what type aircraft could they accommodate? What were the opportunities for constructing additional runways? Were the adjacent and entrance roads usable? These questions might have been determined in part by photo-reconnaissance, but time was short as the tactical situation was changing hourly. But engineer-observers and pilots were not anxious to fly over enemy-held fields in L-4s.

A new plane was needed; one that had good visibility, maneuverability, and, especially, speed. The air forces were using a P-38 fitted with a plexi-glass nose instead of guns as a lead ship in Droop Snoot missions. The Lightning was the answer. From its nose compartment, the engineer-observer had unobstructed views straight ahead, beneath, and to the sides. Lt. Gen. Hoyt S. Vandenberg, CG of the 9th Air Force, gave the Engineer Command an A-1 priority on their request for two P-38s.

Aerial Engineer Reconnaissance used the planes to dive into the Luftwaffe's own back yard to see if there were any fields that we might want to use. The procedure was to come over a known German airdrome during the day at between zero and 100-foot altitudes, with an escort of four armed Lightnings. The airfields visited were ones that were expected to fall into American hands in the near future. At the beginning of April, 1945, the "near future" sometimes meant only a few days.

The Droop Snoot sorties were hardly "milk runs" since the engineer-observer needed at least two deck-level passes down the centerline of the field at a constant rate of speed just to determine the length of the landing strip. The Droop Snoot sometimes faced plenty of flak although the passes were made at speeds between 450 and 500 miles an hour. On one such pass, 1st Lt. Edison K. Hamilton estimated that his ship was exposed to more than 2,000 rounds of flak in less than 10 seconds.

The sorties were always made in bright daylight, preferably brilliant sunlight, since shadows quickly indicate the defilades, obstructions, irregularities, and differences in altitudes of the terrain at the field. The important job of getting a good mental picture of the field, calculating statistical data, construction, repair, and demolition possibilities was such that the pilot dared not take evasive action against flak while the observer was getting his information.

Just prior to the campaign inside Germany, General Newman expressed the opinion that the time saved through the use of three aerial reconnaissance teams alone was responsible for at least one additional airfield a week built by the 16 battalions then engaged in construction. An estimate of the time and labor saved during the Germany phase of the campaign has not yet been made. It will be a difficult task to calculate. But the Japs will get little satisfaction from this speedy new method of selecting airfields. ☆

This former Luftwaffe airfield in Germany became P-47 base for 9th Air Force fighter operations ahead of U. S. Ground forces.

Navigating the Pacific

BY CAPT. AL TUDYMAN
Asst. Navigation and Briefing Officer, Hamilton Field

Let's assume you are a hot navigator from the ETO. You split every target right down the middle. The courses you plotted were exact, your calculations precise, your log a masterpiece of double-entry bookkeeping. You brought your flights back through weather, around flak belts and over mountains. Suddenly the wheels of military necessity turn, and you are assigned to the Pacific.

Navigating across the Pacific, from the States to the Philippines, is not a hazardous assignment. It entails considerable overwater flying and, occasionally, some tricky weather, but 99.99 percent of the flights go through. However, there are precautions you must take, some fundamentals you must relearn, some things you should not forget.

The distance from the West Coast to the Philippines is about 7,000 nautical miles. You will make the flight in easy stages, but you have to be wide awake all the way. For the Pacific is a big ocean, and you can easily get lost.

Here are some of the precautions we suggest to ATC personnel who fly the route from Hamilton Field.

Learn to take three or more star fixes. Don't be satisfied with just two-star shots. At times, celestial calculations may be your only navigational means, and one misplaced star can cause considerable difficulty. It may be true that two-star fixes were satisfactory in your previous experience. But you will not find them satisfactory in flying the Pacific.

Superfort navigator computes an ETA.

Be sure you do not misapply variation. There is a variation swing from minus 18° in the States to minus 12° at Hawaii. One navigator in a B-25 on its way to Hickam was given the variation of minus 18° from his true course, but he applied it positively and flew 36° off-course. When his pilot realized the situation, he asked for a radio bearing, and found that he was 750 miles from Dutch Harbor.

Know your astro-compass so you can determine true headings. Learn the stars en route. Keep a constant eye on the compass. If your compass is wrong by just one degree, you are off-course one mile for every 60 miles you fly.

Use all the navigational facilities at your command—noon fixes, Polaris, landfalls, radio beacons and ranges, electronic devices—everything in the book. Don't be afraid to use the radio when necessary. Some navigators feel that their pilots will think less of them if they fall back on using the radio. Pilots are interested in getting there.

The principal recommendation is—don't fall asleep. And that isn't just gratuitous advice. A navigator going from the States to Hawaii recently took just a one-star fix, then he promptly went to sleep. The winds changed and pushed the plane off-course. The pilot suddenly realized that he was flying at 10,000 feet in the vicinity of 14,000-foot mountains. He got a bearing and brought the plane in. When last seen, the pilot was chasing his navigator the full length of Oahu Island.

Normally, the flight is made in four steps. The first, from the West coast to Hawaii, is 2,100 nautical miles. Four sea-rescue vessels are located about 400 miles apart along this route. Employed as navigational aids and for homing and rescue purposes, they are the only available checkpoints on the first leg of the flight.

The weather is variable. Sometimes you will be unable to shoot a star for as long as six hours. In such cases, you are advised to use surface craft homing facilities, when available, and make constant drift readings if possible. You are encouraged to take double drifts—one every hour and a half is not too often during daytime. At night, smoke bombs which light up like flares can be used for drift calculations providing there is no undercast.

From November until March, icing conditions are prevalent, but you can usually fly below the icing level. It is necessary, however, to receive permission from Oceanic Air Traffic in California before you change your altitude.

Sometimes you will run into a severe buildup of cumulus and cumulo-nimbus. If possible, don't fly through such clouds, for some have dangerous vertical currents and they are of extreme turbulence. At night, if a plane must go through them, it is advisable for the pilot to slow down by pulling back on the throttle. From March to November, there are no unusual weather conditions. Most cloud buildups will be below your flight altitude.

The next jump from Hawaii may be to Kwajalein—a distance of 2,133 nautical miles. Along this route, 713 nautical miles from Hickam Field, is Johnston Island, which may be used in an emergency. This island is only one mile long and one-quarter mile wide. It was necessary to extend the strip beyond the island to accommodate big transport planes.

Here you are near the equator, and you often run into intertropical fronts characterized by a cloud buildup, wind changes and turbulence conditions which require instrument flying by the hour.

Kwajalein is easy to find. It is the world's largest atoll.

From Kwajalein to the Marianas is a flight of about 1,300 nautical miles. There are no island checkpoints. Weather is about the same as that on the previous flight leg.

The 1,200 nautical-mile flight from the Marianas to the Philippines offers no particular navigational problems. Occasionally there are local weather areas which will require good judgment and instrument flying.

Navigating the Pacific is a simple assignment for anyone who pays attention to his work. But, if you get to daydreaming, the hazards of overwater flying may prove too much for you. For the Pacific is a big ocean.

Through years of flying the Pacific, the ATC has assured present and future flights good routes and understanding of potential dangers. All pilots and crew members will admit that flying the Pacific safely depends on the navigator's accuracy and skill and close cooperation of the crew. ☆

Turnabout to Tokyo

Solid Comfort, 8th Air Force B-24 with 57 missions to credit, brings its crew home to Conn. Plane and crew will be redeployed.

On its eighth mission, the Liberator "V Bar" sighted no enemy aircraft, dodged no flak belts, carried no bombs, fired not one round of ammunition. Yet, so far as the feelings of the crew were concerned, this was their most successful mission. The target: home.

Lt. Gordon H. Kretchmar, pilot, landed his plane at 1142 hours on May 22, 1945, at Bradley Field, Conn. His was the first of 65 planes which arrived that day, and of approximately 3,400 more to follow, in the first redeployment of heavy bombardment units from Europe. Eight hundred enlisted personnel, aircrews and groundmen, and 275 officers —an average of over 16 per plane—came in the first day, all from the 8th or 15th Air Forces. They were jampacked into B-17s and B-24s which had flown the North Atlantic route and made stopovers at Iceland and Newfoundland.

Facilities to greet them were operated with precise military efficiency. Within 20 minutes, the first crew had been processed and was on its way to the mess hall and barracks. Within 24 hours, the entire 1,075 men entrained for the Army Service Forces Staging Area, Camp Miles Standish, Taunton, Mass. From there, they went to the ASF Reception Station nearest their homes, where they received a 30-day leave or furlough, exclusive of travel time. About one-quarter of the planes flew the South Atlantic route, landing at Hunter Field, Savannah, Ga. The men on this flight went to the staging area at Charleston, S. C.

The men returned in aircraft they had used against the enemy. The suitability of the men for combat against the Japanese was the determining factor in their selection for return to the United States. Their planes were flown to Air Technical Service Command depots by the ATC pilots where some of the planes are in the process of reconditioning for eventual disposition by the AAF.

At Bradley, the scene was one of wild enthusiasm. Loud cheers rang out when enlisted Wacs arrived to greet the men and serve as guides. "Order me a dozen," one man said, "they're kinda small." Red Cross ladies served orange juice, coffee and doughnuts, but one gunner demanded, "Is there a cow in the house?" He said he would drink four quarts of milk a day for the next year. A Piper Cub flew over the field and a pilot and copilot both joked about putting in for a transfer to the light planes. The traditional battle between B-17 and B-24 enthusiasts continued. "What beats me," said a navigator, "is that a B-17 passed us 50 miles out of Goose Bay. I can't see 17s passing 24s." Western Union messengers hawked telegrams. "Anywhere

A pat on the ol' U.S.A. terra firma feels good to these men.

Returnee happily forks over his gun at the ordnance Turn-In booth.

BY HERBERT RINGOLD

AIR FORCE *Staff*

For thousands of AAF combat and ground crewmen who participated in this vast aerial troop movement via heavy bombers from Europe, the U. S. was only a brief stopover enroute to the Pacific air war

in the United States for 31 cents." The men scrutinized the form telegrams and many of them sent one which read, "Home For Good."

But they were not home for good. Upon their return to duty, they went to Central Assembly Stations, then to stations where they began training for very heavy bombers and eventual operations against the Japs. Their leave period was for the purpose of recuperation, rehabilitation and recovery (RRR). It was made perfectly clear that their return to the States was only a way stop. With few exceptions, every man would join the war against Japan as soon as possible.

Another project, to move AAF, AGF and ASF personnel from Europe to the States by ATC planes was underway. Under this plan, ATC will move approximately 50,000 troops per month. Preference is given to those who are sick or wounded and to those who will be demobilized after reaching this country. Eight hundred planes will be used for this purpose.

In Europe, planes of the Troop Carrier Command will transport the men from their stations to aerial ports of embarkation. The ATC will fly them over, using Presque Isle, Me.; Grenier, N. H.; New York City; Wilmington, Del., and Miami, Fla. as the principal landing fields. ☆

Fast, efficient system in receiving-hangar enables men to be processed hurriedly. Clothing and equipment are turned in at booths.

Men leave hangar in "Mickey Mouse," converted searchlight van.

Planes of the Far East Air Forces have set up a vast air-sea blockade that has sealed off vital supply lines from the East Indies to Japan's home islands

SMASHING JAP SEA LANES

The colonel walked over to a large wall map of the China coast and stuck a white headed pin in the South China Sea just off Amoy. He studied the map briefly and turned back to his desk.

"That baby won't last long," he commented.

Another Jap freighter, represented by the pin, had ventured into the open sea, and 5th Air Force B-25s already were closing in for the kill. There were other pins in the colonel's map, scores of them. There were pins for ships sunk; others for damaged surface craft; pins showed enemy vessels tied up in harbors, a pin for every Jap vessel in the South China Sea. Every time one of these ships moved, a pin was moved on the colonel's map. The air-sea blockade against enemy movement of vital supplies had reached a stage of near if not complete perfection. The conquest of Luzon had put the stopper in the bottle.

Once our bombers, fighters and patrol planes began operating from Luzon's network of airfields, once the Jap Air Force in the Philippines had been wiped out, our planes were able to turn wholeheartedly to the job of sealing off the home islands of Japan from their primary sources of the raw materials of war in the fabulous Netherlands East Indies, Borneo, Malaya, French Indo-China.

Our aircraft had switched from defensive to offensive sea patrol late in January throughout the Philippines area, but the complete organization of this vast blockade was no simple task. Areas of coverage for the Air Forces had to be defined. A network of almost split-second communications had to be established among Army, Navy and RAAF planes to make the blockade effective.

One development unique in the operations of the 5th and 13th Air Forces grew out of a conference between planning officers of the Far East Air Forces and the 14th Air Force, which took place late in March. A plan was worked out whereby the 5th and 13th would be designated to strike targets along the China coast, enabling many 14th Air Force bombers, which had engaged in this coverage, to concentrate on inland targets where all available air strength was sorely needed to aid Chinese ground forces and blast the way for Allied armies on the march in Burma. Thus the 5th and 13th Air Forces began operating outside their own theater for the first time, except for the 5th's strikes on Formosa, since the beginning of the Luzon campaign.

Results of the new arrangements were not long in coming. On March 28 and 29, B-24s, B-25s and P-38s of the 5th Air Force moved in on a northbound convoy off the Indo-China coast and sent 35,000 tons of shipping to the bottom of the China Sea. The bag included two destroyers, two destroyer escorts, one 11,000-ton tanker and two 6,000-ton tankers. Fourteen enemy planes were shot from the skies, with seven other probables. We lost one P-38.

One account of this action submitted to General George C. Kenney, commanding general of the Allied Air Forces in the Southwest Pacific, pointed out: This strike is indicative of a new phase in our air effort, tactical operations against enemy convoys which provide for complete coordination of search planes and land-based bombers and fighters. Communications between these elements, and shadowing and attack techniques have been worked out and are now operative.

Here's an example, somewhat oversimplified, of how this coordination is effected: A Navy PB4Y search plane spots a convoy moving up the China coast and immediately signals Air Forces Headquarters. Land-based bombers, say B-25s, are dispatched at the opportune moment to take care of the job. The mediums usually have to be pulled off previously assigned missions for such strikes. Meanwhile, the PB4Y is shadowing the convoy, just out of range of antiaircraft guns. When the B-25s near the area, the Navy search plane directs the bombers in for the attack.

Frequently, isolated shipping is hit by day-flying search planes themselves, when the danger of concentrated ack ack or fighter interception is not too great.

Some of the most successful search missions, from the standpoint of shipping sunk, are flown by the jet-black night-searching B-24s of the 63rd Bombardment Squadron of the 5th Air Force's 43rd Group. Flying singly or in pairs and bombing visually as well as with the aid of special equipment, these nighthawks sank 21 ships during the month of March, representing more than 50,000 tons of shipping. Their bombing and strafing runs are made from minimum level. (For details of tactics employed by night bombers, see "Snoopers," March issue of AIR FORCE.)

Planes of the Allied air forces in the Southwest Pacific, scouring the seas from Australia to Shanghai, sank 1,800,000 tons of Jap shipping from January 1 to April 30, not counting probables and possibles, nor scores of unassessable barges and junks. The latter vessels took on greater importance when the Japs began transferring vitally needed cargo to them from larger ships in an effort to sneak through the blockade. Restrictions against bombing and strafing junks have been lifted and instructions issued to sink on sight any junks found outside certain limits off the China coast.

Territories of responsibility for the various components of the Allied air forces engaged in the blockade line up roughly as follows: 5th Air Force, the South China Sea and the Asiatic coast from Saigon to Shanghai, the waters around Luzon and the Formosa Strait; 13th Air Force, South China Sea and French Indo-China coast, along the Malay States and parts of the Netherlands East Indies; the Royal Australian Air Force, the Arafura, Timor and Banda Seas, East Indies areas and north around Borneo. The territories as defined are purposefully flexible so that any air component is able at all times to combine power with another.

With the high perfection of the air blockade technique, the famed battle of the Bismarck Sea has its China Sea

Flames roar up from Jap tanker loaded with vitally needed aviation gasoline, after B-25s score direct hits at Mako on April 4.

Two Mitchells churn the water with hits and near misses on a Jap vessel during the March 29 attack which cost the Japs 9 ships.

counterpart almost every day. In most instances, the convoys are not as large as the 22-ship concentration that was blasted off the New Guinea coast in March of 1943, but the frequency of "grand slam" strikes against them provides the parallel. The reports come in with almost monotonous regularity. A flight of B-25s is led by a Navy searchplane under the operational control of the 5th Air Force to a convoy of two destroyer escorts and three freighters. The result: One 6,000-ton freighter and one destroyer sunk, one 8,000-ton freighter and one 6,000-ton freighter left burning and sinking, the remaining destroyer afire and claimed heavily damaged. Fourteen 13th Air Force B-24s sink or damage nine Jap ships in the Makassar Strait, including two destroyers, five cargo vessels and two schooners. B-24s sink or damage 21 vessels in Parepare Harbor, Celebes.

Except for low level strikes by night flying heavies, B-24

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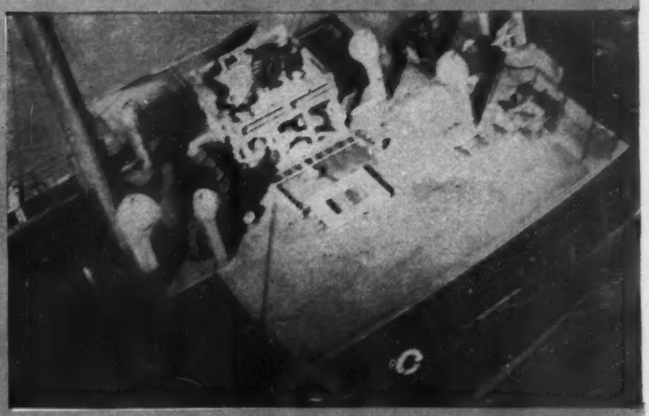


Attacking plane swoops so low over Jap freighter that photo-interpreters identified gun mounted aft as infantry 75 mm field piece.

This dead duck was caught in the South China Sea by 345th Group B-25s which fly daily patrols along this Nip shipping lane.

Ten minutes later, freighter at left is listing to port, its bow and forecastle submerged. Wreckage, swimming Japs littered area.

attacks are made principally from 10,000 to 12,000 feet on shipping in coastal harbors, since antiaircraft installations around dock areas are still sufficiently businesslike to warrant fairly high altitude runs.

Acquisition of Philippine bases permits our medium bombers and fighters access also to ships in China ports as well as in the open sea, despite the fact that on many strikes these planes have to fly as much as 600 miles to reach their targets.

B-25s with their devastating forward fire and mast high bombing techniques have been particularly successful. Generally, the 25s strike each ship in pairs, moving in from different directions simultaneously. The firepower of their eight .50 caliber nose guns either knocks out the antiaircraft or takes care of the gun crews on the first pass to make subsequent bomb runs a little more comfortable for the aircrew members. As many ships in a convoy as possible are attacked at the same time to avoid concentration of antiaircraft fire. The initial strafing runs usually are made lengthwise of the vessel in order to rake the entire deck; then the bomb runs are made broadside to straddle the ship with explosives. In most instances, 500-pounders are used with a four-to-five-second fuze delay.

Fighters have come in for their share of credit in the blockade, although the sea lane job is primarily that of the bombers. Occasionally, fighters employed as escort for heavies striking harbor areas get a chance to expend some ammunition by strafing coastal vessels. Others, carrying a couple of bombs, have blasted dock areas, airdromes and harbor shipping all along the Asiatic coast, particularly in the Saigon area. The first 5th Air Force strike on ships in the Hong Kong harbor, which took place early in April, gave the fighter boys an opportunity to get in a few licks. While the B-24s blasted the harbor with only negligible fighter opposition, some of the escorting P-38s struck a body blow against airfields on Hainan and along the south China and Indo-China coasts.

In mid-April, when it became evident that shipping by sea was getting them nowhere, the Japs made a desperate attempt to open the entire rail line from Indo-China through the China interior to the north so they could obtain at least a trickle of supplies via the land route. Our airpower again cramped their plans, this time with regular strikes on railroads and bridges by bombers of the 10th and 14th Air Forces and Superfortresses of the 20th Bomber Command.

Early in May, bombers and fighters of the 5th and 13th Air Forces, and Navy patrol squadrons under their control began taking a hand in cutting lines of communications inside the coast from Singapore to Shanghai; meanwhile, the noose on sea shipping was getting tighter and tighter. On April 16, the normally busy ports at Wenchow, Foochow and Amoy were empty of enemy ships. On the following day, at least three other ports were added to the list. Later came Saigon and Phanrang in Indo-China, Youlin Bay and Hoihow harbor on Hainan, Hong Kong, Swatow, Shanghai, Make harbor in the Pescaderes Islands, and Takao, Toshien and Kaiirun on Formosa.

The vessels venturing into these harbors were being blasted by the heavies; those preferring to make a run for it were falling prey to the mediums. Jap ship captains obviously were struggling with indecision. Blocked from the north, from the south and threatened day and night from the middle, many of the skippers began running aimlessly out to sea for the relative safety of motion. But the pins on the map moved when they moved. Their destruction was inevitable, and without their cargo the Jap military machine was grinding slowly to a stop. ☆

REDEPLOYMENT IN THE AAF

(Continued from Page 6)

sidered for relief from active duty in the AAF in order to work for a civil airline?

A limited number of officers and flight officer pilots who have completed overseas tours in combat theaters or participated in overseas operations of the ATC will be eligible to apply for consideration. They must have been in the United States for six months before making their application. Acceptance will depend upon whether they can be spared by the AAF and whether they prove acceptable to an airline engaged in operations essential to the prosecution of the war.

8. *Will the reception centers for redeployed personnel resemble the redistribution stations to which AAF returnees have been sent by the Personnel Distribution Command?*

There is no connection and no resemblance between the two. A reception station in the redeployment system is primarily designed to control and speed military movement; personnel will normally stay at such a center no longer than two days. Redistribution stations, on the other hand, are primarily for classification and reassignment; some have extensive facilities for rest and recuperation.

9. *During the redeployment period, what are the opportunities for entering flying training?*

The aviation cadet program has been sharply curtailed. Men now in flying training can fill current needs. Personnel experienced in combat, however, will be given priority in later selections.

10. *Will men assigned to duty in the United States after a tour of duty overseas be given their choice of stations? Can they be assigned near their own homes?*

These two questions usually come together, but they are very different propositions. It is obviously impossible to give all returnees their choice of stations. On the other hand, it has been the policy of the AAF since April to assign returned enlisted ground personnel as near their own homes as possible. In this way, those eligible for release in the near future will be close to their separation centers near their homes.

11. *Can personnel assigned to the Occupation Air Force bring dependents to Europe?*

Because of shortages in transportation, food, and housing facilities, the policy of the War Department for the time being prohibits dependents of Army personnel from joining husbands and relatives overseas. When two members of a family are assigned to the same theater, the reason will be military necessity and not family relationship.

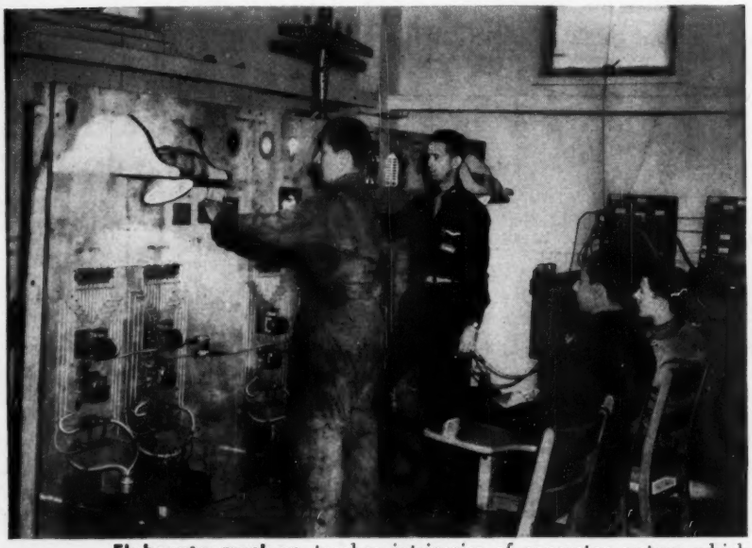
12. *How does demobilization in the AAF compare with the general plan announced by the War Department?*

The AAF will demobilize the same percentage of its strength as the rest of the Army. The process in the AAF will be somewhat slower than that in the Ground Forces. Later, additions to the AAF from Selective Service and transfers of surplus personnel from the other main forces will balance the AAF's rate of demobilization. In other words, as the program levels off, there will be no inequalities among the major forces of the Army. Criteria for release are uniform throughout the service; the Adjusted Service Rating card and the point system are identical. Like all other phases of the armed forces' joint effort, redeployment and demobilization are keyed not to celebration of victory in Europe but the establishment of peace through the defeat of Japan. ☆

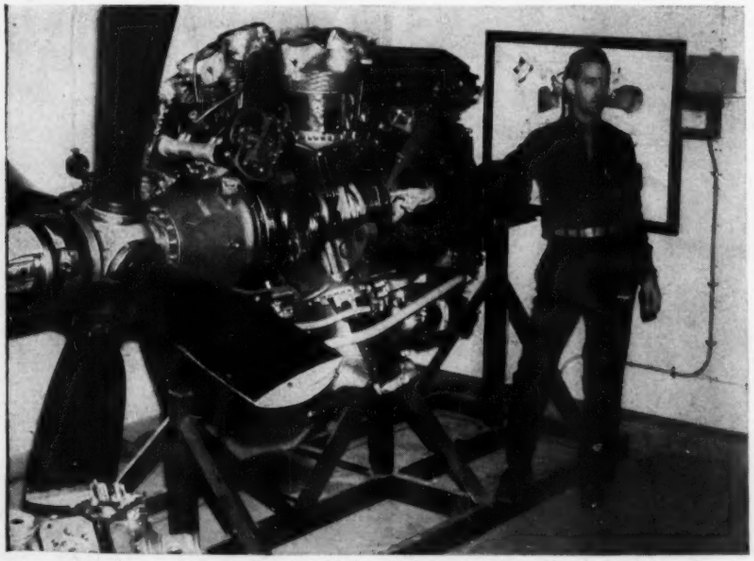
T/Sgt. Lynn Kelley is B-29 flight engineer who completed 51 missions as engineer on B-17 before he was trained to handle B-29s.

B-29 Flight Engineer

He's the boss of fuel consumption, a vital factor on roundtrip hops of 3,000 miles and more



Elaborate mock-up teaches intricacies of generator system which supplies current for operating the landing gear, wing flaps, bomb bay doors, cowl flaps, inverters, and interior and exterior lights.



Instructor at Smoky Hill's flight engineer school explains the internal mechanism of the 3,350 engine and the Hamilton propeller.

Capt. J. V. Norton, a wing flight engineer with the 21st Bomber Command, suggests that being a B-29 flight engineer is more like having a profession than a trade.

"The flight engineer," Norton explains, "governs the efficiency formula prescribed for the B-29. He must know the right combination of operating variables to obtain optimum performance for any given condition of flight. In combat we require only one optimum — most miles per gallon. The greater fuel economy we achieve, the greater bomb load we can carry."

Why, then, haven't there always been flight engineers on bombers? The answer is in the type of mission flown by the B-29. In the old days, you just loaded up an airplane with gas and flew it at a constant airspeed. But Japan was a round trip of some 3,000 miles from bases in the Marianas. There were problems of changing weather, winds, climate. Even more important, there was the problem of changes in gross weight during flight.

The job called for men with good theoretical as well as practical engineering background. Pan American Airways learned that a long time ago when it put its Clippers into long range operation. There was a flight engineer on the early Catalinas, the Boeing 307 and 314. The B-19, the Constellation and the Navy Mars carry flight engineers. All these, like the B-29, were designed to carry heavy loads for long distances.

As Captain Norton puts it, the only difference between the commercial airlines and the 20th Air Force is in the ultimate objective. The airlines figure in terms of dollar profit per mile. Combat aircraft must figure in terms of bomb pounds per mile. Being an engineer, Captain Norton promptly created an equation: The efficiency of a bomber command equals bombing accuracy times weight of bombs, divided by operating cost in fuel.

"The flight engineer," said Captain Norton, "isn't only

(Continued on Page 61)

Silent Partner of

Geared to the air war, research laboratories of NACA have found the answers to many basic problems facing America's aircraft designers and engineers

BY MAJ. ROBERT V. GUELICH
AIR FORCE Staff

The AAF and aircraft manufacturers and engine designers have taken many of their troubles to the National Advisory Committee for Aeronautics. Almost invariably, they have come away with recommendations that have contributed to the solution of specific problems hampering performance of our warplanes.

The problems have included "hot cylinders" in the B-29, icing carburetors in the C-46; the contributions have included compressibility flaps for the P-38, improved bomb bay doors for the B-24, to mention a few.

Trouble-shooting such as this, however, is a wartime by-product of NACA, whose primary business is basic scientific research. It was set up as a civilian agency by Congress the year after the outbreak of the first World War "to supervise and direct the scientific study of problems of flight with a view to their practical solution."

The agency has been a leader in debunking the idea that the only way to increase the speed of aircraft is by increasing horsepower. Through three decades of research, NACA has increased the speed of every type of airplane being used by the Army, Navy and commercial airlines. This research work also has extended the range of our aircraft without correspondingly increasing the rate of fuel consumption.

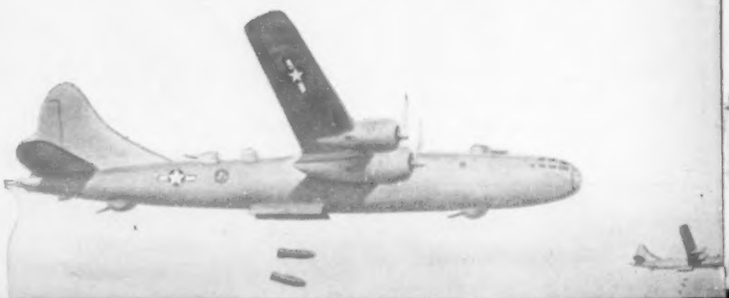
The XP-39, for instance, had its top speed boosted from an original 326 mph to 402 mph, although this speed later was sacrificed to incorporate necessary military modifications. The XP-41 was flying at 309 mph when NACA engineers scientifically bent a few exhaust stacks, put the hot gases to work as jet thrust, and upped the speed to 327 mph. Air-cooled engines were limited in horsepower output by the critical temperatures of cylinder heads; NACA made several recommendations to improve cooling of these engines with the result that more horsepower was obtained from the same engines.

Because of these contributions, the AAF was able to perfect the P-63, now obtains jet thrust augmentation from the exhaust stacks of Merlin and Allison engines, and gets more horsepower from all military air-cooled engines.

NACA carries on its research in its laboratories and wind tunnels at the Army's Langley Field, Va., the Navy's Moffett Field, Calif., and the Cleveland Municipal Airport, where the nation's best equipped aircraft engine research laboratory now is operating.

Today the organization employs 6,500 people and operates with an annual budget of $26,000,000. In addition to its own facilities, NACA works closely with the aircraft manufacturers, the Army's experimental division at Wright Field, the Navy's Bureau of Aeronautics, and regularly contracts research work out to technical schools, universities and specialized research organizations.

View of NACA Aircraft Engine Research Laboratory, adjacent to Munic-

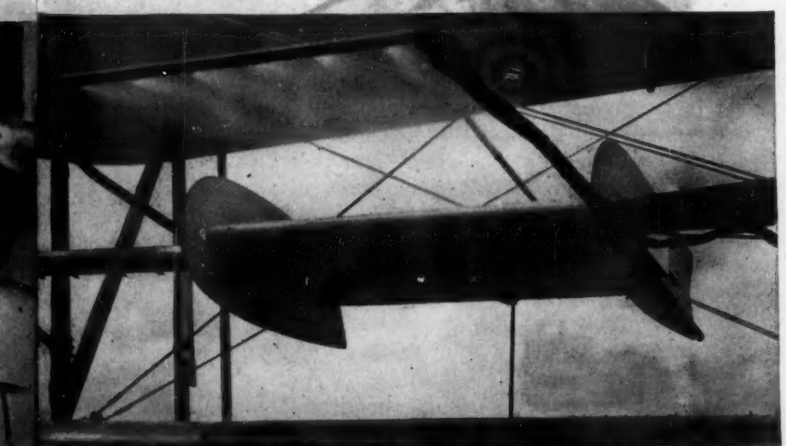


Experiments with scaled models form a large part of NACA's work. An engineer prepares to measure air-speed behind dual propellers.

–ipal Airport, Cleveland. Hangar at left has 40,000 sq. ft. floor space.

# of U.S. Airpower

DRAWING BY LT. BERTRAND MANGEL



A model airfoil is installed to examine results achieved through the use of engine exhaust to prevent the formation of wing ice.

The early days of the agency were meager ones, however. Established in the spring of 1915, the original appropriation to launch NACA was "$5,000 a year for five years, or so much thereof as may be necessary." Eighty-five thousand dollars was appropriated a year later to start the first research laboratory at Langley Field. In the years immediately following World War I, appropriations for aeronautical research were so lean that the NACA had to hire civil service employees to erect its first engine dynamometer laboratory.

Despite its monetary hardships, the organization was successful in enlisting some of the best technical minds in the nation. Before the end of World War I, the NACA had set up the design requirements and stimulated production of the Liberty engine, most notable American contribution to aviation of the period.

In 1923, NACA published conclusions of the first investigation of jet propulsion for aircraft in this country. Until planes could be built to withstand far greater speeds, it was concluded that the jet propulsion could not be regarded as practical because of its inefficiency at low speeds. This study was revived in 1939, and led to the first successful demonstration in December, 1941, of an American-built jet propulsion engine.

It was during the two decades of peace-time research between World Wars that NACA assembled evidence to prove there is a difference between the science of aeronautics and ground-bound mechanical engineering. In general, to increase appreciably speed of an automobile, a ship, or a train, you can only increase horsepower and improve roadways. To increase speed of an airplane, you can, instead, remove protuberances and smooth out angular joints that interfere with perfect airflow and increase drag. Thus, by concentrating its wind tunnel tests on the reduction of drag, NACA was successful in jumping top speed of particular types of early aircraft as much as 50 mph.

During the 1920s, pilots sighted between their engine cylinders when shooting landings. Consequently, they didn't favor blanking out this vision by enclosing the engine in a cowling, even if NACA did have figures to prove that speed could be greatly increased. A compromise method was to use a metal band, known as the Townend Ring, around the perimeter of radial engines.

Glenn L. Martin, who put all of his faith and money in a new twin-engine bomber for the Army, used the Townend ring around the engines as standard equipment. The plane had a satisfactory topspeed of 190 mph, but the Army turned it down because the landing speed of 95 mph was too fast. This trouble was remedied by using the recently developed NACA cowling on the new NACA nacelle location within the wing, which utilized the lift of the wing behind the engine instead of destroying it.

Martin made this simple change and took his plane back to the Army for test. The top speed was jumped to 225 mph, even faster than any fighter of that day, and the landing speed was reduced to 65 mph. The Army bought the plane, designated it the B-10, and the Collier Trophy was awarded to Martin for the greatest achievement in aviation for the year 1932. This airplane did, in fact, revolutionize military aviation concepts.

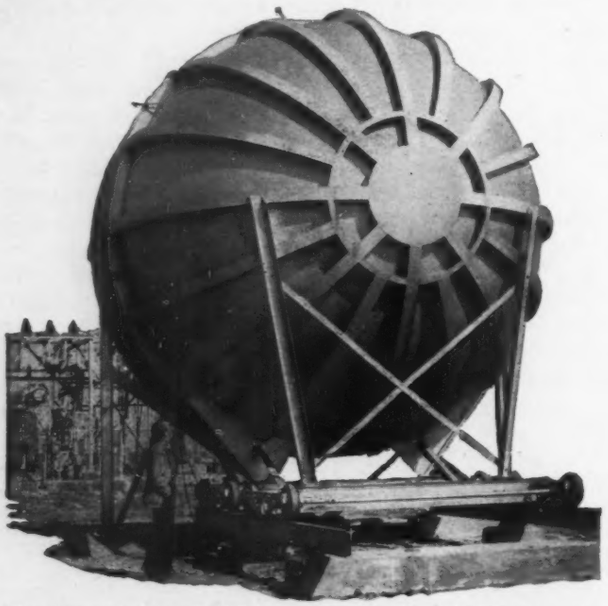
Today, the NACA cowling is used on all planes with air-cooled radial engines except those in the light-plane, slow-speed class.

After developing many original designs of airfoils, NACA developed a high-speed airfoil principle which was first used by North American on the P-51 wing. This airfoil delays the compressibility "burble" by moving back the shock-wave formation point. With it, laminar flow may be maintained

at high speeds over the first 60 percent of the wing instead of only the first 30 percent. With this type of airfoil, the P-51 has been flown in high-speed dives well over 600 mph before encountering serious compressibility effects.

In the field of compressibility, NACA first discovered and photographed this phenomenon in laboratory tests 12 years ago and has accumulated more scientific information about it than any other military or civilian organization in this country. The compressibility dive flaps on the P-38 and on a new Douglas plane were developed by Lockheed and Douglas engineers on the basis of NACA high-speed wind tunnel tests.

In its cities of wind tunnels, the NACA not only has tackled the problems of high-speed airfoils and drag reduc-



In the Ames Aeronautical Laboratory, a part of NACA's branch at Moffet Field, California, a 16-foot wind tunnel obtains test data.

tion, but also has devoted thousands of hours of research and testing to improve controllability and stability of our aircraft. Every new type of plane goes through the spin tunnel and is modified so it can be pulled out with safety. Controls are investigated to determine their effectiveness. Propellers, engines and coolant ducts are exposed to severe icing conditions in the nation's only icing tunnel.

Although the mission of NACA is to conduct basic scientific research, the pressure of war has compelled the use of many of its facilities to help eliminate bugs in military equipment.

When all of our forces in China were dependent on the Aerial life-line over the Hump from India, C-46 Commandos were being flown to Assam direct from production lines to replace and augment the force of war-weary B-24s and the tired C-47s that had opened up this difficult supply route. Last summer's monsoon weather brought drenched air and real trouble for C-46 pilots. They could get through the turbulent storms all right if they didn't lose an engine from carburetor icing, but too many carburetors were icing up in the saturated air.

When enough evidence was gathered to indicate the trouble might be localized in the air scoop, this urgent problem was given to NACA. In their new icing wind tunnel at Cleveland, a C-46 nacelle was exposed to 200-mile an hour icy winds laden with humidity. Ice quickly formed in the scoop and in the induction system. Design engineers analyzed the airflow, redesigned the scoop, built drainage vents into it, and eliminated the most troublesome cause of carburetor icing. Their recommendations immediately were forwarded to the AAF and to the manufacturer, so that modification kits could be sent to CBI to remedy the trouble on planes already there, and the change could be incorporated on production line aircraft.

No sooner had the world's first refrigerated high-altitude engine wind tunnel been completed at the new Engine Research Lab than the AAF called for special tests on B-29 engines, which had been hindering performance of the plane by overheating. Carefully instrumented tests were run and remedial measures were tried with the result that some of the NACA recommendations contributed to the solution of the "hot cylinder" problem and accelerated effective use of the Superfortresses against the Japanese homeland.

As soon as this engine was taken out of the wind tunnel, the Army had a priority investigation scheduled on the turbo-jet engine of the P-59. Tests showed some of the ducting could be improved, so changes were made to increase its efficiency. Then, an even hotter project, the jet propelled P-80, was shipped in for a series of gruelling performance tests at extreme speeds and altitudes in the high-altitude wind tunnel.

Whenever possible, however, maintenance and production bugs are smoothed out in the laboratories of Wright Field for the AAF; only when scientific research is needed to iron out a problem, or when Army facilities are inadequate, or are jammed with other projects, is NACA called upon for assistance. But, in time of war, there are too many projects for existing military test facilities so most of the capacity of NACA is absorbed by military projects, forcing postponement of NACA long-term research work.

Although the NACA jet engine of 1941 was temporarily dropped when the military requirements for the Whittle-type high-speed, relatively short-range engine were given priority, many of the techniques developed to evaluate the performance of this engine now are being adapted for evaluation on other types of jet engines.

The NACA jet unit, developed by Eastman Jacobs, was designed for long range as well as high speed. It drove a compressor fan from a conventional 1,000 hp radial engine; air from the compressor was ducted to a combustion chamber with 59 fuel atomizer nozzles; as the fuel-air mixture was burned, the hot gases were exhausted through a tail pipe, augmenting the thrust of the compressor fan by 100 percent. Net thrust attained in early tests was 600 pounds, considerably less than that which now is obtained from present jet units.

As has been the case with many research projects, NACA did not develop the specific design we are using today, but its engineers did establish many of the principles that are influencing the general design and determining performance of the various types of jet engines now under consideration. NACA officials are among the first to disclaim exclusive credit for their contributions. It is their policy to lead the way in fundamental research on new aeronautical problems, to assist others in their developments and to conduct high priority tests on experimental aircraft and components.

In its quiet, scientific way, the NACA is working 24 hours a day on high priority Army and Navy projects. For this reason, much of its work during the last few years has been hidden under the barrel of military security. Other phases of its long-range research programs on jet and rocket fuels, on guided missiles and supersonic aircraft will continue to be kept from the public eye for years to come. But many of the agency's achievements already have aided our planes in gaining aerial superiority in this war. ☆

CHINA CHECKERBOARD

A review of the China war and its relationship to the activities of the 14th Air Force

War in China has been full of contradictions. One of the strangest is that during all the recent months, when China stood at bay, the 14th Air Force never went on the defensive. This paradox has no relation to the sort of thing that General Dittmar used to call the Wehrmacht's "advances to the rear." Although the 14th was compelled to destroy a dozen or so of its own airfields, 90 percent of all the missions that Maj. Gen. Claire L. Chennault's men flew were straight offense.

In pounding out this contradiction, the 14th presented the Japanese with a grim bit of irony. Although the Japs accomplished more than one of their prime objectives in the campaign that began in 1944, their most important drive did not pay off.

With defeat coming at them from the Pacific by water and by air, the Japanese started their campaign in China last year from three large areas—the Yellow River bend, the Yangtze bulge and the Canton-Hong Kong section. Their immediate purpose was to establish an overland route from North China to French Indo-China. They also intended to eliminate those 14th Air Force bases which threatened Jap land and water transportation in the southeast and to discourage Allied landings on the China coast by filling out their conquest of Southeast China. Defeating the Chinese Army and discrediting the Central Government were parts of the ultimate plan.

In April, 1944, the Jap drive began in earnest. Moving south of the Yellow River, the Japanese occupied the Pinghan railway zone, north and south, and part of the Lunghai railway, east and west. Before two months had passed, they were counting on a north-south corridor. On May 26, Japanese divisions in the Tungting Lake area began an offensive against Changsha and Hengyang, south of Jap-held Hankow. The defense of Hengyang by the Chinese 10th Army and attempts by other armies to come to its relief were heroic but tragically expensive actions. The Japanese also paid a tremendous toll. Whenever they massed for siege of a fixed point, the 14th Air Force went after them. They soon learned not to mass for sieges. Wherever the 14th spotted troops or supplies in motion or holed up, they attacked and so forced the enemy to move in the dark. Still the Japs kept coming against Hengyang, which fell early in August.

By September further drives southwest had begun. Many Chinese points were by-passed. The American base at Lingling fell. As the Japanese regrouped their forces and jabbed out southwest of Hengyang and Lingling, they also began to drive west from the Canton-Hong Kong area. Liuchow was threatened; so was Nanning. First the Chinese spread out to meet the attacks; then they brought a desperate concentration into Kweiping. Here the 14th delivered one of its most powerful blows, but the Chinese were unable to turn the ground tide.

November was a black month on the road to Tonkin. Kweilin fell on November 10. The next day, Liuchow. In less than two weeks, Nanning was gone. The 14th had already crossed off its map airfields at Hengyang, Paoching, Lingling, and Tanchuk.

Fighting from centers around Liuchow, the Japs continued to smash out at Chinese troops and transports. They caused gigantic damage. Finally, near Kweiyang — only about 200 miles from Chungking — the Chinese stood. Deepening winter and extended supply lines, together with the prospect of a fight for a fixed position, caused the Japanese to pull back. The Chinese, however, did not have the forces to rout the retreating columns.

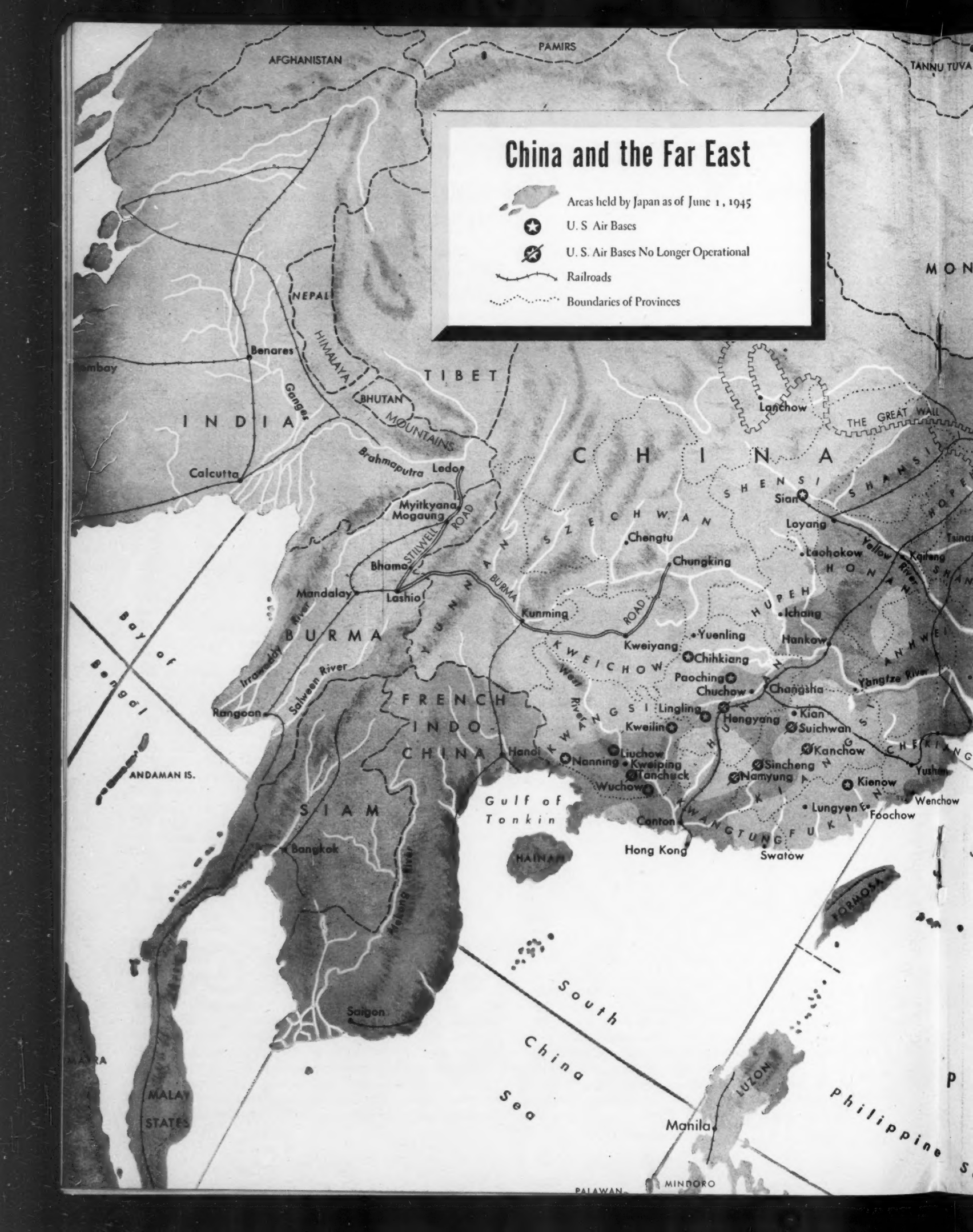
As 1945 began, the Japanese had massed several hundred thousand men south of the Yangtze. They already had the making of the projected corridor from North China to French Indo-China. They had isolated whole sections of China from overland supply; they had ground some Chinese units to bits and sapped the strength of others. With forces concentrated in areas north of the West River, east of Kweilin, and about Hengyang, they might expect to put the Canton-Hankow railway into full operation, and move against such 14th Air Force bases as those at Suichwan, Kanchow, and Chihkiang.

Regrouped Jap forces reached Suichwan by the end of January. Earlier, about the middle of the month, the Japanese had started their long-expected offensive to clear the Canton-Hankow corridor. In 10 days they broke loose along a 200-mile front and pushed their infantry and cavalry 100 miles, often in contempt of terrain which would be marked "impassable" on anybody's map. Once more the 14th erased names from its list of bases—Namyung, Hsincheng, Kanchow—and, for a time, Suichwan.

The Japanese propagandists were making sounds of joy. Here was a good chance of supplying and reinforcing the Canton-Hong Kong area by land. The 14th Air Force's threat to shipping along the China coast had been curtailed; so had the possibility of its cooperation with invasion forces. The effectiveness of the Chinese Army had been reduced. Weren't Japs swirling up and down the areas between Hengyang and Canton, about Suichwan, and between Canton and Swatow? At the same time, forces were massing solidly at widely separated points in the Shanghai region and in French Indo-China. In the latter area the Japanese had taken over French garrisons and disarmed the troops early in March.

Meanwhile, the 14th Air Force was not limited to blowing up airfields so that the Jap advance would be robbed of profit. Off and on, January and February produced miserable weather; but whenever a break came—and in March there was an especially good one—the 14th proceeded to set new records for assault. During the spring, this got to be a habit. Given a few clear days, the fighters and bombers would ring up another high for total missions.

The Japanese campaign in Southeast China having made the 14th's attack on the sea lanes impractical, General Chennault had concentrated his offensive up north, where vital Jap supply lines ran by road and river. Shanghai and the Yangtze were attacked by deeply penetrating aircraft. Forthwith, the Japs began to pound at the 14th's North China bases. In the last week of March, advancing ground forces compelled the Americans to abandon the field at Laohokou. But the old Jap plan had changed. Whereas in


China and the Far East
Areas held by Japan as of June 1, 1945
U. S Air Bases
U. S. Air Bases No Longer Operational
Railroads
Boundaries of Provinces
AFGHANISTAN
PAMIRS
TANNU TUVA
NEPAL
HIMALAYA
Benares
Ganges
TIBET
INDIA
BHUTAN
MOUNTAINS
Brahmaputra
Ledo
Calcutta
Myitkyana
Mogaung
STILWELL ROAD
Bhamo
Mandalay
Lashio
BURMA ROAD
Kunming
Lanchow
THE GREAT WALL
CHINA
SHENSI
Sian
Loyang
SZECHWAN
Chengtu
Chungking
Laohokow
Yellow River
HONAN
HUPEH
Ichang
Hankow
Yuenling
Kweiyang
KWEICHOW
Chihkiang
Paoching
Chuchow
Changsha
Yangtze River
Irrawaddy River
Salween River
Bay of Bengal
BURMA
Rangoon
FRENCH INDO-CHINA
West River
KWANGSI
Lingling
Hengyang
Kian
Kweilin
Suichwan
Kanchow
Hanoi
Liuchow
Nanning
Kweiping
Tanchuck
Wuchow
Sinchong
Namyung
Kienow
Yushan
Wenchow
Lungyen
Foochow
ANDAMAN IS.
Gulf of Tonkin
Canton
Hong Kong
Swatow
KWANGTUNG
FUKIEN
HAINAN
SIAM
Bangkok
Mekong River
FORMOSA
South China Sea
Saigon
MALAY STATES
Manila
LUZON
Philippine
PALAWAN
MINDORO

TANNU TUVA
Arctic Ocean
ARCTIC SIBERIA
U S S R
MONGOLIA
Amur River
FAR EASTERN SIBERIA
MANCHUKUO
Harbin
SAKHALIN (Sov. Un.)
KAMCHATKA PEN.
Sea of Okhotsk
Petrapavlosk
Tientsin
Mukden
Dairen
KARAFUTO (Jap.)
PARAMUSHIRO
KURILE IS.
Tsinan
Kaifeng
SHANTUNG PEN.
Tsingtao
KOREA
Vladivostok
Yellow Sea
Sea of Japan
Sapporo
HOKKAIDO
Shanghai
Fusan
Aomori
Yushan
Wenchow
East China Sea
Nagasoki
Kobe
Kyoto
HONSHU
Sendai
SHIKOKU
Osaka
Nagoya
Yokohama
Tokyo
Kagoshima
JAPAN
Ocean
IZU SHICHITO
RYUKYU IS.
OKINAWA
N
Pacific
BONIN IS.
IWO JIMA
VOLCANO IS.

1944 their attacks along the Pinghan and Lunghai railways had been offensive, the purpose of Jap operations in Honan was now clearly defense. To protect their transportation they had to take great risks.

As for the Allies, the late spring brought several blunt questions. Would the Chinese be able to hold on the ground? Would weather permit General Chennault's flyers to keep their vertical warfare in high gear? How would the Japs react to the threat from the Pacific?

The answers came in short order. The Chinese did hold. At numerous points, on the coast, around Nanning, and in the north they made the Japs miserable by counter-attack. Off and on, there was good weather; the first week in April the 14th used it to break the total-mission record again, and repeated in the third week. Where the 14th had left off bombing the shipping lanes between Shanghai and Indo-China, the Far East Air Forces took up with a vengeance. In Burma, too, the 10th Air Force was giving the Japanese a war. And no Jap could be expected to look happily at events in Tokyo, Nagoya, and the Philippines.

In May, the Japanese lowered their sights in Honan. Toward the southeast, they were obviously uneasy. On many an inland route, the 14th Air Force hawked and harried their military traffic. When Peiping-Hankow trains ran at all, they ran irregularly. The road from Canton to Hankow was still largely a plan. As General Chennault put it, "The Japanese corridor from Manchuria to Malaya has turned into a dream pipeline."

There was a touch of Oriental courtesy in General Chennault's not calling the dream a nightmare. During more than a year of the Jap drives, his fighters' combat score against the Japanese Air Force had been more than seven to one, with a three-year average of five to one. Monthly tonnage over the Hump had greatly increased. In the earlier period, bombers of the 14th had ranged the waters between Formosa and the mainland. They had paid damaging visits up and down the hinterland, along the coast, and into Burma. Their photo units had pointed lenses at the entire coast and much of the interior. The 14th's transports had crisscrossed a theater larger than Western Europe, sometimes in sudden and difficult emergency, often on regular runs which were dangerous enough to put routine air supply missions into the "combat flying" column. The 14th had had no "typical target." They had hit whatever needed hitting—a town, a compound, an airdrome. They had put locomotives or whole trains out of action, destroyed bridges, docks, truck columns, vehicles, ships.

By no means the least reason for the success of the 14th's unorthodox campaign was its nimbleness in shifting objectives. When the Japs were using rivers in the Tungting Lake area, the 14th went after boats—and sank 1,104 junks, about 500 motor boats, and sundry steamers. So the Japs took to trucks. They lost more than 1,000 along roads watched by the 14th's planes.

Statistics—such as the fact that in these months the 14th eliminated the equivalent of three Jap divisions—point up this year of contradictions. They do not obscure the more bitter facts, the red side of the ledger. Often men of the 14th went hungry, sweated out uncertain supplies, got lost in the hinterland. Being men and not characters in a romance, they sometimes got impatient with their Chinese Allies, and plain fed up with China and war in general. Many were killed and wounded. All, of course, were too busy to concern themselves with historic generalities. This gap has been memorably filled by the Chinese who covered the year's campaign for the Chungking *Herald*, in which he printed his durable conclusion, "The 14th American Air Force has fought its way into history." ☆

Last Days of an Airbase

BY LT. COL. A. T. HOUSE

14th Air Force

In the spring of 1944, the Japanese broke southward out of the Tungting Lake area and it was impossible to hold them. The Chinese ground forces just didn't have the firepower at that time, and even with the heaviest and closest air coordination we had to give ground.

Just before the evacuation of Kweilin, Brig. Gen. Clinton D. (Casey) Vincent gave me orders to hold the Lingling airdrome, and I took nine fighter planes, thirteen pilots and nine ground personnel down there with the intention of holding the base. Every man came along of his own volition; no man was ordered to take the job.

On the morning of September 3, 1944, the last contingent of the Chinese Army between the Japanese and Lingling retreated to the west side of the Siang River, leaving the airdrome, on the east bank, unprotected. This group of Chinese was the rear guard and had been protecting Lingling and the surrounding area.

The Japanese already had surrounded Changning on three sides, and although they had by-passed the fourth side, they had control of the road and were moving on Lingling down the Siang Valley corridor. The last report we had from the Chinese warning net was that the Japanese were 20 miles away, but we didn't know exactly where.

Our main worry was that the Japanese cavalry might sneak up on us and catch our planes on the ground without fuel. If they came in by night we would have to leave our planes and swim the river. We had a couple of sampans tied up to the bank but we didn't think they could do us much good. The Chinese warning net had pulled out and so we set up our own—six men out in the hills with Very pistols. They were to shoot the pistols at the first sight of approaching Japanese cavalry and then run to beat hell.

One day our warning net spotted two enemy aircraft and signalled the information to the airdrome. Two of our planes went up and dropped one of the Japs. We had planes in the air every moment of the day, in flights of either four or five planes. We had to have a patrol up at all times and so when one group was on the ground being refueled, the other flight was in the air. No plane stayed on the ground more than 10 minutes, and our planes averaged 15 hours a day, not including night flying. One day we flew nine missions and on the next day there were six. When the planes were on the ground, the pilots had to remain in the cockpits, and when we were able to get food—we went hungry a lot in those days—the pilots were fed seated in their planes.

We pulled out when the first Jap column was about six miles away from the Lingling airdrome. We blew it up a half an hour later. The Chinese wanted to destroy the field, too, and we had to chase them off with pistols to keep them from blowing it up while we were still on it. One transport left about half an hour before our fighters and took the ground personnel except for the engineer and his assistants who set the charges which destroyed the field. These men then crossed the river, climbed into a jeep and got away.

General Vincent figured that in 1½ days the squadron flew 144 sorties, not counting night patrols. He also said that as a result of the sorties flown at Lingling, the Japanese advance on Kweilin was retarded from four to five days, enabling our forces to evacuate Kweilin without loss of equipment, personnel or vital supplies. ☆

CROSS COUNTRY

News and Views around the World

30,000 Strong – Page 38

Destination—Tokyo

Four days before Germany signed the Reims surrender, hundreds of freight cars loaded with AAF supplies were rolling eastward to Newark's overseas depot. Then a cable from General Spaatz to General Arnold, and a teletype from Washington to the ATC Supply Division at Wright Field, effectually ended the war in Europe as far as further shipments of air supplies were concerned.

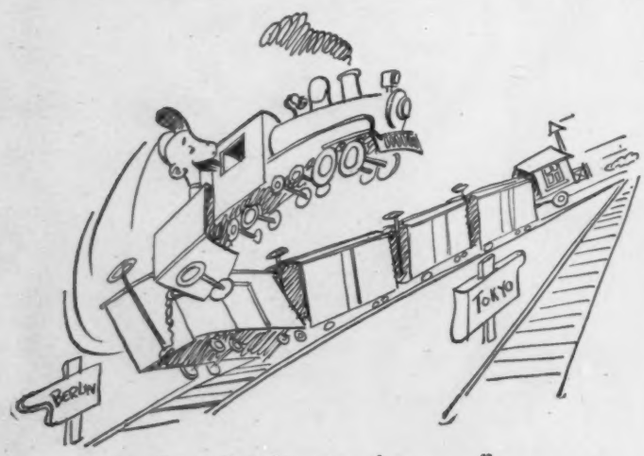
Teletypes and telephones all over the country began ringing with orders to stop all eastbound AAF freight, to cancel all further shipments and to unload cars and ships that had not yet started moving. In the next 72 hours, 369 freight cars were pulled out of trains and headed back to depots where they had been loaded. By Monday, the day before the capitulation of Germany, and the day on which the official Army embargo on all railroad shipments was put into effect, only 21 AAF cars were still moving east.

The titanic flow of war supplies to the ETO, except those needed to sustain units remaining in Europe, had been stopped without a hitch—the tremendous volume of two-way traffic across the United States was virtually ended. From V-E day on, most supplies moved toward but one destination: Tokyo.

Since November, all supplies destined for ETO had carried "Ship" or "Stop" markings. "Ship" meant those supplies that would be needed after the fall of Germany. "Stop" indicated those supplies which would not be needed.

Special markings on ETO requisitions for many months had indicated whether or not the supplies would be needed after V-E day. Goods so marked were promptly reviewed in the States and thousands of tons of supplies were stopped before they got out of warehouses, the pay-off of careful planning on the part of Maj. Gen. L. T. Miller and his associates in the Supply Division.

Orders were given, switches were thrown and supply trains were shunted into sidings from which they were returned to warehouses or rerouted without causing any freight jam in railyards or at AAF depots.



". . . Switches were thrown . . ."

Less than two weeks after V-E day the first movement of several thousand B-17s and B-24s, each carrying a maximum of 20 men, air and ground crews from Europe, began to arrive at Hunter Field, Savannah, Ga., and Bradley Field, Windsor Locks, Conn. They had hurried essential personnel home from one war to be made ready for another.

Some groups are scheduled to fly or be shipped direct to the Pacific and India-Burma and China theaters. The groups going direct to the Japanese warfront from ETO are carrying 60-day supplies of bolts, nuts, wingtips, instruments and all other essential stocks. This would have been a normal stock level in the ETO, but it is only half enough at the end of our extended supply lines in the Asiatic-Pacific theater. Another 60-day supply therefore is being sent to the Pacific to meet each group at its destination. And, this 120-day stock-level will be maintained as the minimum level for all continuing operations, being replenished periodically through normal supply requisitioning channels.

Some groups moving direct to the Pacific area will not have the required organization equipment to take with them. Two days after V-E Day, the first shortage list was received at ATSC from a ground force unit which carried some AAF equipment. Immediately, the needed supplies were packaged and shipped to the Pacific to be there when the ground unit reached its destination. The same system has been followed on all subsequent shortage lists sent in by ETO outfits.

As much as 70 percent of the equipment in Europe on V-E day may be returned to the States, or shipped to forces fighting Japan. The job of supervising and repackaging this equipment is being handled by the same men who went to England early in 1944 to help move the mountains of supplies across the channel with the invasion forces. Actual crating is done by men of the squadrons and groups who will be using the same equipment against Japan on the other side of the world. Special purpose motor vehicles, such as C-2 wreckers, are shipped to Providence, R. I., where they are overhauled and sent on to the Pacific area. Reconditioning of standard vehicles is taken care of by Ordnance.

In addition to the problems of keeping the AAF's forces supplied as they are redeployed, provisions were made for the aerial movement by ATC of 50,000 men per month from Europe to the States via northern and southern routes. Compak kits (30-day supplies for a group of planes) were dispatched to South America the same week that Germany fell. These keep the C-47s of the Troop Carrier Command stocked with spare parts as they meet the trans-Atlantic C-54s upon their arrival at Natal, Brazil, with veterans from the European war.

At the other end of the line, Troop Carrier C-47s are flying men from Europe to Casablanca where they make connection with the Air Transport Command's trans-Atlantic service—the most tremendous aerial movement of personnel ever planned or accomplished.

". . . Plus Free Medical Care"

The corporal needed a doctor. Fire had swept through the lonely little outpost at Fish Lake in Canada's Yukon country and fumes had struck down Joseph B. Guagnini, one of the AAF Weather Service observers. Unable to revive him through artificial respiration, fellow observers radioed the nearest airbase at Whitehorse for professional assistance.

Capt. Harve W. Jourdan of Newton, Ill., a medical officer assigned to the Air Transport Command's search and rescue squadron, buckled on a parachute, strapped another chute to a portable oxygen and resuscitation set and took off in a C-47 in

the sub-freezing night. When the signal fire was finally sighted, the pilot dropped down to 1,300 feet and slowed the big ship to 87 miles an hour—two miles short of stalling speed—as Captain Jourdan, making his first night jump, slipped through the emergency hatch and landed less than 50 yards from the station.

Quickly diagnosing a case of severe carbon monoxide poisoning, the captain radioed the circling C-47 to drop the resuscitation equipment, forced the unconscious weatherman to take deep, regular gulps of pure oxygen and, in less than an hour, pulled the corporal out of his personal blackout. Evacuated by ski plane the next morning, Guagnini responded rapidly to treatment at the Whitehorse base hospital.

Dutch Treat

Dutch civilians, grateful for the tons of food showered down upon them by heavy bombers of the 8th Air Force shortly before V-E day, showed their appreciation when the Fortresses made their second visit with another 800 tons of 10-in-1 rations for the famished population. When the planes came in for the drop they saw a message spelled out on the ground with rocks and logs.

It said: THANK YOU, BOYS.

More Proof

If any further proof is needed—and we don't think it is—that the B-29 is built to take a lot of punishment, consider the recent case of one Superfortress that lost part of its left wing in a collision.

Two B-29s collided over the bombing range at Halliday Island. One of them, damaged so badly it could not be controlled, went into a deep plunge and crashed. The other, with 14 feet of the left wing missing, spiraled at 20,000 feet. The pilot, 1st Lt. Woodrow B. Palmer, leveled the plane out at 15,000 feet after a fight with the controls. He began a normal descent at 180 mph indicated.

At 12,000, he went through a simulated landing procedure to check stalling speed. Despite the clipped wing, the plane showed no stalling characteristics until the airspeed was down to 135 mph indicated.

Palmer finished his let-down and brought the plane in, using extra power on engines 1 and 2 to keep the short wing high as he broke the glide. To the credit of the pilot as well as his Superfort, the landing was made without further mishap.

Shutter Happy

"Every gunner in our plane was busy pumping 50 caliber shells into Japanese installations and motor transports, which made me feel like excess baggage because all I could shoot was my camera," complained T/Sgt. Ray B. Lee when his B-25 returned to its base in India.

"From our tree-top altitude everything went by us so quickly I hardly had time to point the camera before we were out of range. Then I spotted what looked like oil

QUESTIONS
on Policy and Procedure

Q. When a rated officer holds a commission in the Air Corps Reserve and holds a higher temporary rank in the Army of the United States, should the officer enter the symbol (01) Air Corps Reserve or the symbol (18) for the temporary rank of the AUS in column 1 of AAF Form 1?

A. *When a rated officer is commissioned in the Air Corps Reserve the symbol (01) is used in accomplishing AAF Form 1.*

Q. May an intelligence officer assigned to a bombardment group and participating in frequent combat missions as an aerial photographer be awarded the Air Crew Member Badge?

A. *Yes, providing the aerial photographer is assigned as a* regular member *of an air crew and has demonstrated his proficiency as such, he may be authorized by his CO to wear the aviation badge "Air Crew Member." (AAF Reg 35-30, as amended).*

Q. Does the policy of granting leaves to WAC officers, Cir 462, WD, 1944, concurrently with leaves or furloughs of their husbands who are in the armed forces, when the exigencies of the service permit, apply equally to members of the Army Nurse Corps?

A. *Yes, although this point is not covered specifically in any directive. The Surgeon General's Office advises that when the exigencies of the service permit Army Nurses are granted leave concurrently with leaves or furloughs of husbands who are in the armed forces. Leaves will not be in excess of the amount of accrued leave a nurse has to her credit.*

Q. Should any action be taken in the case of personnel who have been authorized good conduct medals by headquarters to which previously assigned, although such personnel have not qualified for this rating by attaining the minimum standards for character and efficiency ratings?

A. *No. The Adjutant General advises that persons previously authorized the Army Good Conduct Medal in General Orders may continue to wear it unless the order is rescinded by the headquarters making the award.*

Q. In the June issue of AIR FORCE, the question was asked, "Will WD MD Form 81, now in the hands of troops be automatically withdrawn and replaced by the revised form, Immunization Register and Other Medical Data, WD AGO Form 8-117?" The answer was, "No," in accordance with Sec IV, Cir 32, WD, 1945. Is this still true in view of AR 40-215, 25 April 1945, which supersedes Pars 1 and 2, Sec IV, Cir 32, WD, 1945?

A. *Under AR 40-215, issuance of the new form is not automatic. However, it will be issued at convenience of personnel officer.*

Q. Are the provisions of C 1, AR 345-400, applicable to Morning Reports prepared by AAF organizations?

A. *No. Personnel reported as assigned, attached unassigned, or attached will continue to be recorded by grade. (AAF Ltr 35-107, 18 April 1945).*

Q. How is the amount of time to be allowed for detached service for travel computed?

A. *The amount of detached service allowed for travel is determined by the method of travel. If it is performed by rail, the time allowed is that required by the shortest most usually traveled route; if travel is* actually performed *by privately owned automobile, travel is allowed at the rate of 200 miles per day (para 1, AR 605-180, C 3, 31 March 1944). The day of departure from the old station and the day of reporting at the new station are counted as days of detached service. Any delay en route must be provided for in the travel order or granted as leave of absence.*

Q. Par 4a, Sec II, TM 20-221, February 1945, "War Department Accounting Instructions for Unit and Headquarters Funds," states that all "changes and erasures" in the Council Book, WD AGO Form 10-4 (WD QMC Form 15), and papers pertaining thereto will be authenticated by the initials of the proper custodian. Does this mean that erasures are permissible?

A. *No. A line should be drawn through an item in error, and the item initialed. The WD agency responsible for the publication of this Technical Manual advises that the inclusion of the undesirable procedure was inadvertent. At such time as amendments are processed to the Manual an appropriate change will be made.*

PREPARED BY THE OFFICE OF THE AIR INSPECTOR

cans off to our right, and not wanting to return home with a full camera of unexposed film, I kept the shutter going and got quite a few shots of the area."

When these random shots were developed and complete photo interpretation was made, Sergeant Lee was called in by his commanding officer and congratulated on photographing what turned out to be the largest enemy supply dump found in Burma.

The 12th Bombardment Group and Royal Air Force fighter-bombers promptly blasted the entire supply area and effectively reduced Jap opposition to British forces in the Meiktila sector. The sergeant received commendations from both the 10th Air Force and the Royal Air Force for discovering a target of such strategic importance.

Smiles of anticipation

Good form, feet together, piece slung on right side.

Gurkhas

Gurkha paratroopers, to whom Jap-killing is an exhilarating sport, dropped behind enemy lines in the battle for Rangoon and took an important part in driving the Japanese out of Burma. The Gurkhas, seemingly fearless in battle, were flown by American pilots in C-47s and went into combat under direction of British, Australian and Canadian jumpmasters. Along with the paratroopers went their supplies carried in parapacks, dropped by the Combat Cargo Task Force of the Eastern Air Command.

The Pay Off

Construction of a 285-mile stretch of road between India and Burma, complete with all its winding, snake-like convolutions through the towering Himalayas, was a lonely and heartbreaking task for engineers. Cpl. Jesse J. Crews, a combat returnee, spent most of his 33 months overseas helping to build that road which has been named in honor of General Joseph Stillwell. As a member of the 823rd Aviation Engineer Battalion, he operated a bulldozer, air compressor, drove a truck and served as a mechanic. It was strictly unglamorous work and not until the entire job was completed did he feel that his work had been worthwhile, the corporal says.

"Just before I left I saw the first convoy go through. The trucks were decorated with American and Chinese flags. Truck after truck, sometimes they passed for 30 minutes without a break—it was really exciting to watch. Those of us who had sweated in the jungles and shivered with malaria felt that day that we had accomplished something very important—that our work would not be forgotten."

Reception

Since the comparatively recent arrival of the 2nd Air Commando Group in the India-Burma theater, a spirit of amiable competition has developed between the new organization and the 1st Air Commando Group, which participated in the Wingate-Cochran glider invasion of Burma in 1944.

Recently the 2nd Air Commandos—considered by the 1st to be their junior namesakes—made a glider landing on a newly captured Jap airstrip near Lewe, on the road to Rangoon. When the glider doors swung open and the 2nd Air Commandos poured out, well armed with tommy guns and hand grenades, the first thing they saw was four 1st Air Commando L-5 pilots, sitting on a rice paddy ridge, quietly puffing cigars.

"What's the big idea?" muttered one of the newly arrived warriors, glancing beyond the pilots to their L-5s parked nearby.

"Well, sonny," replied T/Sgt. "Pappy" Myers, grizzled veteran of the 1st Air Commandos, "we heard you fellows were coming to Lewe, so we thought we'd better hurry down to haul out your casualties."

30,000 Strong

More than 30,000 members of the Women's Army Corps, on duty with the Army Air Forces, are assigned to 226 different types of jobs at some 200 airbases at home and abroad. They are on duty in all the active overseas theaters and at isolated bases of the Air Transport Command.

Individual Wacs have been awarded the Bronze Star, Legion of Merit and the Air Medal. As units, they have been praised highly by their commanding generals. Several Wacs, serving in England, were awarded the Purple Heart because of wounds suffered as a result of German robot bombs.

In recent months it has become a familiar sight to see Wacs wearing the wings of an aircrew member. These are women who serve as crew chiefs and radio operators on transport planes. According to recent WD figures there are 15,546 members of WAC overseas, including 7,000 AAF Wacs.

The five Wacs pictured on the Cross Country cover are assigned to the 3rd Air Force, and we add this pertinent data: lower left, Cpl. Dorothy Wright, 25, of Brockton, Mass.; center, Sgt. Dorothee A. Buckley, 23, of Cleveland, Ohio; lower right, Pfc. Karen Smuland, 26, of Duluth,

Minn.; upper left, Pvt. Jeanne E. Broecker, 21, of Oak Park, Ill.; upper right, Cpl. Mary N. Poese, 23, of St. Louis, Mo. The picture was made by Lt. Oscar C. Sweet, 3rd Air Force photo officer.

Surprise

Maj. Robert D. Payne, Jr., B-25 pilot from Greenfield, Mo., flew 45 missions out of New Guinea with a broken back.

The major had to ditch his plane in the sea after his seventh raid, and later a physical examination and X-rays failed to disclose his injury. So, after a short leave, he began flying again and became an operations officer, and later a squadron commander. Forty-five missions followed, and then a second checkup revealed the fractured vertebra. "I was surprised when I heard the news," he said. The major is now at an AAF Convalescent Hospital in Miami Beach, Fla.

NAAFW Educational Funds

Educational assistance is now available to certain dependents of AAF personnel through the Scholarship Fund of the National Association of Air Forces Women. This association has established a student lending fund which advances money without interest or collateral to deserving students in order that they may attain their educational goal. These students must be the children of Army Air Forces military personnel.

The awarding of these scholarships will be on a non-competitive basis; however, first consideration will be given to the children of deceased prisoners of war. Applications for assistance should be made at least six weeks before the beginning of the semester for which funds are needed.

Article V in the constitution of the association defines the purpose and benefactors of this fund. "The association will establish, foster and develop a fund to assist in furthering the education of deserving children of Army Air Forces military personnel who have died while prisoners of war by making gifts or loans to such children to enable them to meet the necessary expenses of their education and by establishing scholarships for such children and for other deserving children of AAF personnel."

A Scholarship Fund Committee has been appointed which includes: Mrs. Howard C. Davidson, chairman, wife of Major General Davidson; Mrs. Oliver P. Echols, wife of Major General Echols; Mrs. Laurence S. Kuter, wife of Major General Kuter; Mrs. Arthur Vanaman, wife of Brigadier General Vanaman, and Mrs. William Crom, wife of Colonel Crom.

The members of this committee have made a study of the questionnaires and methods of several scholarship funds or foundations, and forms stating regulations and restrictions which will govern this fund have been drawn up.

Inasmuch as the announced policy of the association is to give first consideration to the children of deceased prisoners of war, interest in the fund has been accentuated by recent disclosures of conditions in Ger-

PLANE BONERS

Analyzed by Veteran Pilots

APO 493—Two hours from target on a tactical bombing mission in a B-29 the No. 3 engine began acting up and lost power. Remaining three good engines were operated at high power ratings, resulting in excessive fuel consumption. Lack of fuel forced crew to abandon.

Comment: If a shot of conscience could be injected in all crew members so they would abide by the limitations of their plane, accidents such as this wouldn't happen. B-29s, more than any other bomber, are team play planes. In this accident fuel consumption was judged by gages, neither the pilot nor engineer utilizing the cruise control data in computing gasoline used at the higher power rating. As a result the Superfort was flown beyond the point-of-no-return.

VENICE, FLA.—Pilot in P-51C came in for a night landing and the plane held a steady diving turn of about 90° to the left and crashed into the runway. Investigation disclosed that this pilot had removed the masking tape used to dim lights for night flying. On lowering his head to check instrumennts he probably was momentarily blinded by the glare from the unshaded light, losing his horizon as a result and crashing to his death.

Comment: Watch out for glare from unshaded lights during night flying—it only takes an instant to lose your dark adaptation. Read your Pilots' Information File for full information on aids to night vision.

DELAVAN, KAN.—At 20,000 feet in a B-29 the tail gunner lit a cigarette before he had completed checking his oxygen regulator and turned it off. A small fire resulted and when he reached down to turn the oxygen off he inadvertently turned it on, enveloping the whole tail turret in flames. He later died from the burns.

Comment: Don't smoke until you are certain the oxygen regulator is off.

COLUMBIA, S. C.—A normal landing approach was made in an A-26, but it hit the runway excessively hard. Nosewheel collapsed and props hit runway.

Comment: Landing the A-26 successfully requires power on throughout the approach and flare out. As plainly stated in the A-26 Pilot Training Manual and pictured in OFS's film, "A-26 Flying Tips," keep the nosewheel up, landing in an almost level attitude, nosewheel touching last.

AUSTIN, TEXAS—Flying speed was reached in a C-46D but it would not pull off the ground. Pilot chopped power and applied brakes but speed was too great to stop on the slick runway and the plane crashed into a drainage ditch.

Comment: Crew chief had failed to remove right elevator lock. No external or cockpit check was made by the pilot. Crew chiefs should give pilots an even break by getting planes in proper flying condition. Pilots who don't check their planes or test controls for freedom of movement don't add any dignity (or numbers) to their profession.

MERIDIAN, MISS.—P-51 pilot taxied to line and brought airplane to a stop. After checking cockpit he looked away and in attempting to cut engine he reached for mixture control. Mistakenly, he pulled prop governor control to full back position and as rpm dropped opened the throttle fast. The P-51 nosed up.

Comment: Look before you pull.

WILMINGTON, N. C.—Tow target was shot off by a pilot in a P-47N while making a firing pass from 3 o'clock position. Attempting to avoid the free falling target by shoving the stick forward, the P-47 tangled its left wing with the target. Damage exceeding $6,000 resulted, even though the plane landed safely.

Comment: A shot off target goes down. Best way of keeping clear if you are above it: go up.

BROWNSVILLE, TEXAS—With a gusty, 23 mph wind blowing, a P-47 started stalling in on its left wing during landing. The pilot gave it throttle with the left wing a foot off the runway. The wing struck the runway, pivoting the plane around into a groundloop.

Comment: Coordinate controls or torque will get you. A sudden surge of power will cause your left wing to drop. Be ever ready to correct with right rudder.

LONG BEACH, CALIF.—A B-17 combat returnee with eight hours in B-25s as his total 2-engine time took a P-38 up to 1,000 feet. The P-38 fell off on one side and spun in, killing the pilot.

Comment: Witnesses to the accident stated that one prop ran away. Examination of prop units disclosed that the left prop was in full low pitch. This pilot had no previous P-38 time and no experience with electric propellers. How he was cleared to fly, if he was, remains a mystery. Don't fly any airplane you don't understand.

PREPARED BY THE OFFICE OF FLYING SAFETY

NEW BOOKS

WAR

TANKS AND ARMORED VEHICLES. *Robert J. Icks.* Pictorial account of the development of armored military vehicles. DUELL, SLOAN & PEARCE, N. Y., 1945.

HISTORICAL

HIGH JOURNEY: A DECADE IN THE PILGRIMAGE OF AN AIR LINE PIONEER. *Carleton Putnam.* Adventures in the development of air transportation. SCRIBNER'S, N. Y., 1945.

POSTWAR

AIR POWER FOR PEACE. *Eugene E. Wilson.* An appraisal of the value of air power and its impact upon military and economic security. MC GRAW-HILL, N. Y., 1945.

CAREERS IN SAFETY; CHOOSING A VOCATION IN THE FIELD OF ACCIDENT PREVENTION. *Herbert J. Stack.* Opportunities for a career in the field of safety work. FUNK & WAGNALLS, N. Y., 1945.

TECHNICAL

INTRODUCTION TO PRACTICAL RADIO. *Durward J. Tucker.* A reference book for practicing radio engineers and technicians, as well as a manual for beginners. MACMILLAN, N. Y., 1945.

THE MATERIALS OF AIRCRAFT CONSTRUCTION. *F. T. Hill.* The materials used in aircraft construction and problems in the design of aircraft. PITMAN, N. Y., 1944. 6th ed.

PRODUCTION ENGINEERING IN THE AIRCRAFT INDUSTRY. *A. B. Berghell.* A text embodying principles for the solutions of problems encountered in the aircraft industry. MC GRAW-HILL, N. Y., 1944.

THE RADIO AMATEUR'S HANDBOOK. *American Radio Relay League.* A new edition of this manual of amateur radio communication, revised for wartime and post-war needs. AMERICAN RADIO RELAY LEAGUE, WEST HARTFORD, CONN., 1945.

SCIENCE IN PROGRESS. *George A. Baitsell, ed.* Reports of the latest developments in the nation's laboratories. YALE UNIVERSITY PRESS, NEW HAVEN, 1945. 4th series.

YEARBOOKS AND HANDBOOKS

THE AIRCRAFT YEARBOOK FOR 1945. *Howard Mings, ed.* The most recent issue of a standard aeronautical annual. LANCIAR PUBLISHERS, INC., N. Y., 1945.

DICTIONARY OF TECHNICAL TERMS. *F. S. Crispin.* A new edition, revised and enlarged, of this reference book. BRUCE, MILWAUKEE, 1945. 6th ed.

These books are available to AAF personnel through the AAF Field Technical Library Service, which provides for technical libraries at all major installations. For a complete list of books so available, see TECHNICAL PUBLICATIONS FOR ARMY AIR FORCES FIELD TECHNICAL LIBRARIES, Book List No. 2, March 1945 and supplements thereto. These lists are compiled by AAF Headquarters Library.

Personal copies of these books may be obtained from the publishers or retail book stores.

man prisoner of war camps. Within the first two weeks after V-E Day, the association received gifts totaling $3,500 from servicemen and servicemen's clubs alone. Largest of these contributions was the one of $1,500 from the Non-Commissioned Officers Club at the Tonopah, Nev., Army Air Field.

Battle Honors

The latest list of AAF units authorized by Headquarters to wear the Distinguished Unit Citation badge shows an even dozen additional to those originally published in the March issue of AIR FORCE and in the supplementary lists to be found in each succeeding issue. The following condensed versions of the citations include the number of the unit, the date and a brief description of the action, and the number of the War Department General Order in which the authorization was published.

392nd Bombardment Group (H) Feb. 24, '44

Survived a running attack by nearly 150 enemy fighters lasting two and a half hours to attack the aircraft and components factory at Gotha, Germany. When the Initial Point was approached, the units of the lead combat wing were seen to be proceeding on divergent courses. Faced with the alternative of following the lead units of the air division or pursuing a separate course that might be erroneous, the group made the latter choice, fighting its way through intense flak to pinpoint the target and virtually destroy it. Seven of its bombers were lost and 13 more damaged, with a confirmed toll of 16 enemy aircraft destroyed. (GO 37, '45)

20th Fighter Group Apr. 8, '44

Executed a four-hour fighter sweep over Germany from bases in England, during which time its P-38s destroyed 5 enemy aircraft in the air and 20 on the ground, and destroyed or damaged 18 locomotives, 50 freight and oil cars, 16 flak towers, and various factory buildings, hangars, oil storage dumps, etc. (GO 34, '45)

416th Night Fighter Squadron Apr. 10-11, '44

Maintained continuous night patrols over enemy territory after the establishment of the Anzio beachhead to carry out its assigned mission of protecting shipping, personnel and materiel from enemy night bombers. During one patrol, two Beaufighter crews, ignoring their numerical disadvantage, turned into a formation of 30 to 40 enemy bombers approaching the beachhead area, destroying one, damaging another and causing the remainder to disperse. (GO 35, '45)

484th Bombardment Group (H) June 13, '44

Successfully bombed the marshalling yards at Innsbruck, Austria, after finding its initial target at the Munich marshalling yards so heavily blanketed by smokescreens that visual bombing was impossible. The small formation of 37 B-24s set out on its mission though weather conditions forbade a rendezvous of the planned large assault force, survived attack at Munich by 50 enemy fighters (in which they lost 5 bombers while destroying 18 enemy aircraft) and persisted in its attack on the heavily-defended alternative target 60 miles away, though the formation had already been severely mauled. (GO 35, '45)

362nd Fighter Group Aug. 25, '44

Struck a telling blow against the enemy at a critical point in the campaign in Northern France by attacking naval and merchant vessels in the harbor of Brest. In 4 successful missions, planes of this group scored direct hits on 2 cruisers and 12 additional craft including heavily-laden transports evacuating enemy personnel. (GO 32, '34)

55th Fighter Group Sept. 3-13, '44

Compiled one of the outstanding records of enemy aircraft destroyed or damaged by one group in any similar period of air combat over Europe during 8 heavy bomber escort missions flown in 11 days. In the tremendous task of wresting superiority from the GAF, the group made a material and noteworthy contribution by destroying 106 planes and damaging 51 in the air and on the ground, while losing but 9 aircraft. This ratio of nearly 12 to 1 was achieved both at high altitude during the escort phase and in medium and low level combat after the bombers had been brought safely through the target area. (GO 35, '45

27th Fighter Group Sept. 4, '44

Seriously hindered the enemy's efforts to withdraw from the Dijon area of France by flying 13 missions on this date against motor transport, trains, railway guns and horsedrawn artillery units despite the handicap of operating from bases 200 miles from target area. Personnel showed tireless devotion and exceptional skill in servicing the P-47s of the group through a week of attacks in which the pilots destroyed 57 enemy locomotives, 126 loaded railway cars, and approximately 300 vehicles together with a thousand or more of the personnel manning them. (GO 32, '45)

339th Fighter Group Sept. 10-11, '44

Destroyed 58 enemy aircraft on these 2 days while engaged in escorting heavy bombers and in low level attacks against enemy airdromes. The actions took place at an airdrome near Erding, Germany, on the 10th; and during an escort mission at Munich and a strafing attack on an airdrome at Karlsruhe on the 11th. In addition, 66 enemy aircraft were damaged during these operations. (GO 34, '45)

356th Fighter Group Sept. 17, 18, 23, '44

Comported itself with such distinction in preparatory attacks on ground defenses around Nijmegen, Holland, that the lives of many airborne troops were saved and the success of the subsequent landing operations was assured. In these attacks the pilots attacked pill boxes, machine gun posts, flak emplacements and other small, concealed targets which placed the planes at a severe disadvantage. (GO 35, '45)

78th Fighter Group
353rd Fighter Group Sept. 17-23, '44

Gave invaluable aid and relief to our forces on the ground during the airborne assault in the Arnhem-Nijmegen area. During this period, pilots of the 78th Group destroyed 16 flak installations, numerous enemy vehicles, locomotives, trains, etc. In the same week, pilots of the 353rd Group accounted for 25 enemy aircraft, shot up 66 flak installations as well as numerous bridges, radar stations, etc. The 78th Group lost but 5 planes in the week's action, the 353rd Group, 6. Save for details of destruction, the citations are virtually identical. (GO 34, '45 for the 78th Group, GO 35, '45 for the 353rd Group)

56th Fighter Group Sept. 18, '44

Carried out the extremely difficult and dangerous mission of direct cooperation with the airborne landings in Holland so successfully that the effectiveness of enemy flak against our troops was greatly reduced. In spite of weather that compelled the planes to come in on the deck so they were silhouetted targets for enemy fire, the pilots of the 56th Group, Lt. Col. David C. Schilling commanding, swept in ahead of the airborne armada, sought out and attacked enemy flak positions in the face of superior and concentrated fire. The attack cost 16 of the 39 planes dispatched, but, because of it, the landings were a complete success. (GO 34, '45)

Banzai!

A mechanic's eye-view of what happened when 400 Japs made a banzai attack on Iwo Jima has been told by Sgt. Harry Hamilton, one of ten men involved in a single phase of the night battle on March 26. Hamilton and nine other P-61 mechanics were asleep in their tent when the infiltrating Japs came upon them.

A blade ripped the canvas and a grenade hissed in through the opening. It rolled across the tent and stopped under a packing case. Hamilton was blown out of bed and awakened on the dirt floor with his shoulder nicked, says S/Sgt. Robert O. Frederick, an AAF combat correspondent. Bullets sprayed the tent at waist level. Rifle barrels poked through holes in the north and south ends of the tent and bullets peppered the double rows of cots.

"It was cockeyed. The whole affair," Hamilton said afterward.

The first thing he did, after finding himself on the floor, was to wrap a tourniquet about the leg of a badly wounded companion, a rather confused, automatic reaction which saved the man's life.

Cpl. Bernard J. Overesch, hearing the Jap at the south end of the tent, put a carbine to his shoulder and waited. A form then appeared and more bullets sprayed the tent. Overesch pulled the trigger and nothing happened. A shot from somewhere else felled the Jap, but not before one of the mechanics lay mortally wounded and another seriously wounded.

Cpl. Hiram R. Savidge, aroused by the commotion, got up and modestly wrapped himself in a blanket. Later he found that a bullet had cut the blanket.

By that time the groans of one of the wounded mechanics was drawing fire.

"There wasn't time to be gentle," Sergeant Hamilton reported after it was all over. "I gagged him to keep him quiet, then crawled to the south end of the tent."

Two Japs were standing just outside the door talking to a fatally wounded comrade. Hamilton drew a bead and pulled the trigger. This carbine also jammed. He grabbed another one. It jammed. That was too much. Hamilton began to swear, angry fourth echelon stuff.

Outside, the dying Jap stirred in protest: "Don't talk like that," he jeered. "It isn't nice."

The two other Japs were under cover by then and Hamilton moved back to the center of the tent and cut a small slit near the ground. Through this he could see a foxhole between his tent and the one adjacent. It was occupied by seven Japs.

On the other side three Japs were crawling closer to the tent. Hamilton fixed his sights on one of them. Suddenly a Jap officer dropped to his knees. In his upraised hand was a potato masher grenade. Hamilton shifted sights to the officer and fired. The officer doubled up, still clutching the grenade. It exploded, and the other Japs laughed, as if it had been a boisterous joke.

Action then turned to a Jap who was reluctant to die. S/Sgt. Milwood Hlebof hit him first. The Jap gibbered. Cpl. Frank B. McCollum opened up with his carbine. He fired fifteen shots and saw the Jap flinch with the impact of each one. When the clip was empty, the Jap still stared forward, babbling.

McCollum gave up on this particular Jap and Hamilton took over. "I fired two more shots into him and the guy still kept up his talking and hysterical laughter. I figured my carbine was shooting high so I aimed at the bridge of his nose. The bullet drilled him right between the eyes, and he folded up like a rag."

When dawn sunlight broke over the area, the battle was over and Hamilton suddenly remembered that the Jap officer he had shot had been wearing a saber.

"I ran out to get it," he told the correspondent. "But too late. Some souvenir hunter got there ahead of me."

Release to Airlines

A limited number of officers and flight officer pilots, selected to fill essential posts as civil airline pilots, may now be recommended for release from active duty with the AAF.

They will be assigned either to current airline schedules or to new divisions furthering the prosecution of the war. Eligibility is limited by these three preliminary requirements:

Pilots must have (1) completed a tour of duty in an overseas combat theater or participated in overseas operations of the ATC, (2) have been on duty in the United States for at least six months since their return from overseas, (3) been declared available on the ground that they can be spared or replaced by the AAF.

Letters requesting consideration for this employment should be addressed, through channels, to Commanding General, Army Air Forces, Washington 25, D. C., attention

Dawn revealed riddled American tents and dead Japs.

TRAINING AIDS

Newly Standardized for Field Use

FILMS

TF 8-2096, DENTAL HEALTH—Designed to teach all men in the army the importance of dental health, including early and regular dental care. Running time: 24 minutes.

TF 8-2093, STRICTLY PERSONAL—For limited showing to concerned WAC personnel only. No running time listed.

TF 1-3461, A-26 FLYING TIPS—Takes up most phases of correct takeoff and landing with the A-26 and single engine flight with the same aircraft. Running time: 16 minutes.

TF 1-3460, AERIAL NAVIGATIONS MAP-READING—Demonstrates, by realistic action, the procedure to be followed by the navigator in charting the course of his aircraft. Running time: 21 minutes.

TF 1-3437, 50-HOUR INSPECTION OF THE B-29: PART IV, AIRPLANE CHECK-OUT—Illustrates the work of airplane mechanics functioning as a team in putting the B-29 through the final phase of the 50-hour inspection. Running time: 35 minutes.

FS 1-2232 THROUGH 1-2234, FS 1-2236, and FS 1-2250 THROUGH FS 1-2260, PILOT'S INTRODUCTION TO C-54A AIRPLANE—Film strip series giving general description and operation of various parts of the C-54A aircraft.

PUBLICATIONS

NEW PUBLICATIONS CATALOG—Contains almost 300 titles of miscellaneous training literature produced by Hdqrs AAF, AC/AS, Training and other agencies. No War Department Field and Technical manuals or AAF Tech Orders included, however.

TWO ADT BOOKLETS—"Handbook of Alaska," Informational Bulletin No. 18, and "Handbook of Coastal China, Including Hainan and Formosa," Informational Bulletin No. 19. Request copies from Arctic, Desert and Tropic Branch, AAF Tactical Center, Orlando, Fla.

LIST AND INDEX OF WAR DEPARTMENT PUBLICATIONS (FM 21-6)—New FM 21-6 which is a consolidation of the present FM 21-6, "List of Publications for Training," and WD Pamphlet 12-6, "List and Index of Administrative and Supply Publications."

OBJECTIVE BRIEFING FOLDER DELAYED—Otherwise known as AF Manual No. 61, this folder has been delayed in publication by technical difficulties. Announcement of issuance will be made at later date.

NEW BOMBING MANUALS—Three have recently been issued: "Precision Bombing Practice" (AF Manual No. 62); "How to Improve Formation Bombing" (AF Manual No. 67); and "Bombing Charts" (AF Manual No. 79).

GRAPHICS

VHF POSTERS—Four posters, in full color. Concern knowledge and use of VHF panel switches and lights, practice in homing by use of VHF, respecting radio silence, and D/F (Direction Finding), or position fixing use of VHF.

CHEMICAL WARFARE POSTERS DISCONTINUED—Further publication of both "Standard Series" and pin-up "Calendar Series," AP 1-5011 designation, will not be made.

A-26 POSITION FIRING POSTER SERIES—Binder of 30 poster sheets illustrating position firing rules particularly applying to the A-26 airplane and its varied uses in combat. Developed and produced by Publications Unit of Central School of Flexible Gunnery, Laredo, AAF, Tex.

DEVICES

BOMBING TRAINER, TYPE A-8A (BOMB RACK)—This device supersedes the Type A-8 trainer, and is designed to aid in instruction in the operation and functioning of the standard all-electric bomb rack release (Type A-4), and the bomb hoisting brake mechanism (Type C-6).

TRAINER MOCKUP, TYPE O-56 (C-6 BOMB HOIST BRAKE)—Device to aid in teaching in a simple visual manner the operation and functioning of the automatic braking assembly of the standard type C-6 bomb hoist. Used in conjunction with Bombing Trainer, Type A-8A (above).

Information on the availability of training aids listed in this column, unless otherwise indicated, may be obtained from the chief, Training Aids Division, Army Air Forces, One Park Avenue, New York 16, N. Y., upon request through channels.

of AC/AS, Personnel, Military Personnel Division, Demobilization and Personnel Readjustment Branch, AFPMP-13.

Such letters should (1) request consideration for employment with a civil airline under the provisions of AAF Letter 35-206, and (2) give the pilot's qualifications, as follows: (a) statement of overseas service, (b) length of service in the U. S. since return from overseas, (c) current flying status, (d) current physical qualifications for flying duty, (e) average manner of performance rating as indicated on AGO Form 66-2, (f) age, height, weight, (g) race, (h) education, as indicated on AGO Form 66-2, (i) flying experience as a pilot, including total hours of single-engine, multi-engine, or co-pilot multi-engine time, and type of instrument rating held, (j) a statement as to willingness to accept or unwillingness to accept employment requiring domicile outside the continental United States.

Unit commanders must authenticate the application as to correctness of information. Subsequent commanders will indorse the application and forward the statement of approval or disapproval together with a statement as to necessity for replacement or the availability of a replacement within the command. Available applicants will then be interviewed by airline representatives. Those selected will initiate a request for relief from active duty, supported by a letter from the airline. Applications for relief from active duty are discussed in War Department Circular 485, 1944. These applications should be distinguished from resignations, which will not be accepted by the War Department for the duration of the war and six months thereafter.

Those pilots who are later found unsatisfactory for airline operation or who voluntarily leave the employ of the airlines to which they have been released will be referred to the AAF for recall to active duty. Likewise, officers on inactive status are subject to recall to active duty, if required by the AAF.

Now He Knows

Pvt. Edwin Robinson, Jr., stationed at Sioux Falls Army Air Field, S. D., should have a fair picture of military service in wartime. Robinson was a Marine corporal at Pearl Harbor when the Japs struck there. Two years ago he volunteered in the Navy and spent a year in that service before he was eliminated from aviation training. After four months as a civilian he was called up for induction and this time he chose the Army. "I was curious to see what it is like," he later explained.

Now for Japan

With victory in Europe, the AAF's huge training program has been reshaped to strike even heavier blows against the Japanese. And while some phases of the training is being curtailed, others are rapidly expanding.

As an example, B-29 training will be more than doubled by Jan. 1, 1946, while

the B-17 training program will be cut in half by that date. The training for one of the AAF's present standard fighters will be cut 75 percent, and training for one of the newer planes will be intensified several hundred percent. Troop carrier and liaison training will be continued in force.

Many redeployed men will be taught new skills, and specialists in groups being converted to use of a new type of plane must first undergo factory or technical school training. A B-17 airplane mechanic, MOS 747, may be a very efficient Fortress crew chief, but if his outfit is going to use B-29s, he will need several months of additional training. This instance applies to many specialists. Men must be trained in the immediate future in central fire control, use of several kinds of electrical apparatus.

Re-training will be needed for groups converting from B-25s and B-26s to A-26s.

Many AAF personnel in the Zone of the Interior who have not seen combat must be fitted to replace overseas veterans. It is AAF policy that such personnel shall have the "opportunity" of serving overseas.

Several training command installations will be totally reorganized for new tasks, and plans for this reorganization are subject to quick change as necessity requires. Meanwhile, OCS schools will continue to operate on their present basis, administration and other officers being needed to replace veterans with long service. Combat returnees will continue to hold a priority among applicants.

Here, in brief, is how the end of the war in Europe has otherwise affected the training program:

Glider pilot training is closed to all but rated power pilots.

The only pilot training now available is that open to navigators, bombardiers and glider pilots who are combat returnees and who have not previously been eliminated from pilot training. And it is estimated that only a small proportion of these applicants will get pilot training.

The only aircrew training open to other returnee combat crew members is navigator and bombardier and B-29 flight engineer training.

Procurement of aviation cadets has been stopped. Aviation cadets and aviation students now in preflight school will not be qualified for pilot training. Some of them may go to navigator, bombardier or B-29 flight engineer schools. The remainder will be assigned to technical or other AAF ground training.

Pre-aircrew trainees who have been waiting for flying training will receive ground duty assignments. They will be assigned, without loss of grade, to the continental air forces, to station complements or to technical training.

Air Corps Enlisted Reservists—those who before their 18th birthdays signed up to await aircrew training—have three choices:

1. They may remain in the ACER knowing that when they are called to active duty they will be in the AAF, but not in aircrew training.

2. They may request transfer to the Army Enlisted Reserve Corps, knowing that when they are called they will be in the Army, the branch depending on current needs of Selective Service.

3. They may request discharge from the ACER and become subject to current needs of Selective Service and no longer open to deferment as reservists.

The reduced training schedule is likely to remain in effect since it is believed that aviation cadets and students already in flying training and combat returnees will be sufficient to meet all future replacement needs.

An official War Department announcement states: "The AAF Training Command has concluded its mission of training, as individuals, virtually all the personnel of the world's largest air force. . . . Now the command's mission is to provide a flow of replacements, teach new skills required by special developments in warfare."

From Jan. 1, 1939 through March, 1945, the training command graduated 224,331 pilots, 46,121 navigators, 42,098 bombardiers and 282,836 gunners, a total of 595,381 individuals. The peak of the program was reached in early 1944.

At one time, 60 civilian flying schools were under contract to the AAF to provide instruction in the primary flying phase. Only nine such schools are now under contract, and these contracts will be terminated shortly. ☆

"He just checked out in our link trainer."

PARACHUTES LOST

42- 1082K	42-542378E	42-684089E
42-100634G	42-546279E	42-738982J
42-195934G	42-546424E	42-762511B
42-383903F	42-552345E	42-796096E
42-405986D	42-639577E	42-805450E
42-436792I	42-676757E	43- 57212E
42-445866A	42-680491E	43- 57572E
42-460986G	42-680989E	43- 57576E
42- 47093H	42-681185E	43- 58284E
42- 47098H	42-682496E	43- 58329E
42-488893A	42-682736E	43- 58756G
42-524985E	42-682783E	43- 67581E
42-541233E	42-682916E	

Return to field indicated by letter after number as keyed below

A—Post Field, Fort Sill, Okla.
B—Atlantic Overseas ATSC, Newark 5, N. J.
C—Army Air Field, Big Spring, Texas
D—Orange County AAF, Santa Ana, Calif.
E—Army Air Field, Harlingen, Texas
F—Eglin Field, Fla.
G—Army Air Field, Yuma, Ariz.
H—Lockbourne AAB, Columbus, Ohio
I—AAF, 515 Pickwick Bldg., K.C. 6, Mo.
J—AAF, Victorville, Calif.
K—AAFPDC, Fort McPherson, Ga.

HOW SHARP ARE YOU?

QUESTIONS

1. What planes are shown?
2. How many truck cranes are attached to the plane at left?
3. What numbers appear on the tail of the plane at right?
4. How many jeeps are in the photo?
5. The top hatch is open on both planes. True or false?
6. How many truck doors can you see open?
7. There is a man standing under the nose of the plane at left. True or false?
8. Is the plane at left off the ground?
9. How many ladders do you see on the ground?
10. Does either plane have a revolving top turret?

ANSWERS ON PAGE 57.

P.O.W.

They called themselves "kriegies"

. . . the nazis were "goons" . . .

liberation was wonderful

Lt. Harmon Smith, navigator shot down on bombing mission over Germany on Jan. 7, 1944, reads an article in the Stars and Stripes while evac plane takes him home.

Do you want to know how an AAF guy feels after spending a couple of months in a Nazi prison camp, do you want to know what it does to him? Then look at this man's face. Look close.

AAF lieutenant is slightly out of uniform but they weren't issuing pinks at Moosburg Stalag. The Nazi salute, a pretty grim thing just a short while ago, has now become a big joke.

BY S/Sgt. JIM CHANEY

9th Troop Carrier Command

PHOTOGRAPHS BY T/SGT. ROGER COSTER

Some 30,000 Allied airmen after months of being underfed and living in squalor at Germany's Stalag Luft 3 at Sagan were forced to march 100 miles in sub-zero weather—70 miles without rest or shelter—to a camp at Moosburg that made Sagan seem palatial.

These men, most of them Americans, the others RAF, Polish and Norwegian flyers, were rescued when American armies drove east from the Rhine. The Germans had moved the prisoners west when the Russians came on from the east. Then when the Americans started coming towards them from the west, the Germans didn't know what to do. Their vaunted organization broke down completely, and any faint traces of decency and self-respect left in the Germans after years of their Nazi philosophy disappeared.

The Americans held their discipline, though, while living in evil-smelling huts and leaky tents and eating starvation rations. Things at Sagan, before German transportation and communications broke down, hadn't been too bad. Red Cross parcels came in regularly, and the men, in attempts to relieve boredom, had organized amateur theatricals, baseball and basketball leagues, classes in languages and other subjects.

Discipline was good, the only concession being that saluting among ranks was not required. State clubs were organized where men exchanged what little news they got from home. The Germans put out a paper, which they tried to give the American touch by calling "O. K. Kid." Its "impartial" reports of the news were carefully loaded with heavy German propaganda which fooled no one.

Lt. Lawrence Townsend, B-17 pilot, brought back his wings, lieutenant bar, and an assortment of Nazi souvenirs pinned to his wool knit headgear. Townsend was captured after being shot down by flak during bombing run over St. Lo, on July 25, 1944.

POW millinery modes are fashioned by liberated airmen. Man at left wears GI wool cap, considered quite chic. Black fur job was bartered from Russian slave laborer. Fancy wool chapeau at right was bought from a German guard for two cigarettes.

The forced march from Stalag Luft 3 at Sagan in Silesia, to Stalag 7-A at Moosburg near Munich, occurred in bitter January weather. At Moosburg the Germans had hardly enough transportation or supplies to feed and clothe their own troops, so they let the Allied prisoners starve and freeze. Red Cross parcels were appropriated by the Germans.

In the months at Stalag 7-A the prisoners developed their own slang. They called each other "kriegies," a corruption of the German word *krieg*, meaning war. They improvised things they called "kriegie stoves," "kriegie chairs," and "kriegie pots." Germans were called "goons." For a long time, the Nazi guards and civilians refused to believe the unmistakable news that Germany was collapsing. Finally they could see it, but when they received any particularly bad tidings, they would merely shrug in bewilderment.

For the men imprisoned at Moosburg, these last few months were spent in an intense sweating out that was almost torture. They knew the Americans were coming, but they were not at all sure of the temper of the guards

who they feared might shoot them rather than let them be rescued by the Allies. Too, they could see that it was possible—almost likely—that they would be caught in the cross-fire between rescuing Americans and their Nazi guards.

The kriegies were preparing their slight breakfast when on April 29, the 14th Armored Division of the Third Army swung down to Moosburg. Machine gun and rifle bullets sang through the camp and the kriegies and their guards hit the dirt, and one or two men, lacking caution, raised their heads and saw infantrymen in American uniforms and tanks with white stars advancing on the camp.

The Stalag commandant, a captain in the Luftwaffe, was *really* scared. When a lull in the shooting came, he grabbed the nearest piece of white cloth he could find, and ran through the camp, out the gate, and down a road, frantically waving his white flag. Taken into custody, he chattered at his captors that he had spent nearly 13 years in the United States. He had always been just and considerate to his prisoners; just ask them, he said. He was just a soldier doing a job, he said. He didn't expect any consideration, none at all, but he had always been a kind man and a good soldier, see. He never had been a Nazi, never; in fact, he didn't even like Nazis. The tankers and the kriegies laughed at him.

The prisoners, some of them in German hands for years, were happy, almost scared, they were so happy. They stayed in the barbed wire-fenced stockade for four more days while details from the Provost Marshal and from the Medical Corps inspected the camp and its occupants. They had solid American food brought to them. Then they fell in for their last formation in Stalag 7-A, and AAF troop transport planes flew them out. In one morning, more than 10,000 were taken to the coast of France to Camp RAMP, abbreviation for Recovered Allied Military Personnel.

In the pictures on this page, T/Sgt. Roger Coster, of the AIR FORCE overseas staff, has caught some of the joy at freedom, the hope of seeing home, and the terrible bitterness toward the Germans felt by these men who saw their comrades die in battle, and also saw them die from mistreatment and starvation at the hands of the Germans.

Thousands and thousands of men have gone through Camp RAMP, and usually they are out of there and on their way home in about three days. They are checked by the medics; refitted with clean clothes, often their first in months or years, and they get their pay brought up to date, a tidy sum for men imprisoned for eighteen months or more.

Refitted, shaved and showered ex-POWs wait for PX ration cards near pile of de-loused clothing that had been worn in prison camps.

Now, after a long, long time of being kriegies, anonymous and miserable, they are back in the AAF again—sergeants, flying officers, lieutenants, captains, majors and colonels. They are getting back much of the weight they lost. They never lost any of their spirit.

☆

Here is what some lately-rescued American prisoners of Germany had to say as they landed at Camp Ramp on the French Coast:

German Thinking

Col. Darr H. Alkire, 15th Air Force, shot down over Aviano, Italy, January 31, 1944: "The Germans were the most gullible idiots I've ever encountered. Regardless of their rank or background, they had no opinions except those outlined by Goebbels. They always complained that we bombed indiscriminately and that we had no cause for entering the war."

The AAF

Lt. Garrett R. Thomas, P-38 pilot shot down over Yugoslavia, May 29, 1944: "Our Air Force was a constant threat to the Nazis—and to us. On marches we were forced to watch continuously for fighters. If we stopped for chow or rest, they would appear almost immediately. They made it impossible for us or anyone else in Germany to relax."

Precision Bombing

Lt. Lawrence Townsend, B-17 pilot shot down over St. Lo, July 25, 1944: "I've marched through cities where railroad yards and factories were completely wiped out, and houses and churches a few hundred or thousand yards distant weren't touched except by concussion. In one Stalag we were near railroad yards, and the bomber boys tore the rails to hell but not a bomb fell near us."

What Airborne Joes Think

Pvt. Michael Dziezgowski, 82nd Airborne Division paratrooper captured near Nijmegen, Holland: "We kid the Air Forces plenty, but they can take it. We're partners. The Troop Carrier pilots have taken us 82nd jumpers into some plenty rough spots—Sicily and Salerno, to name a couple—but every time they've stuck with us all the way. In Holland, they went through terrible flak and dropped us as close as guys can be dropped."

The Red Cross

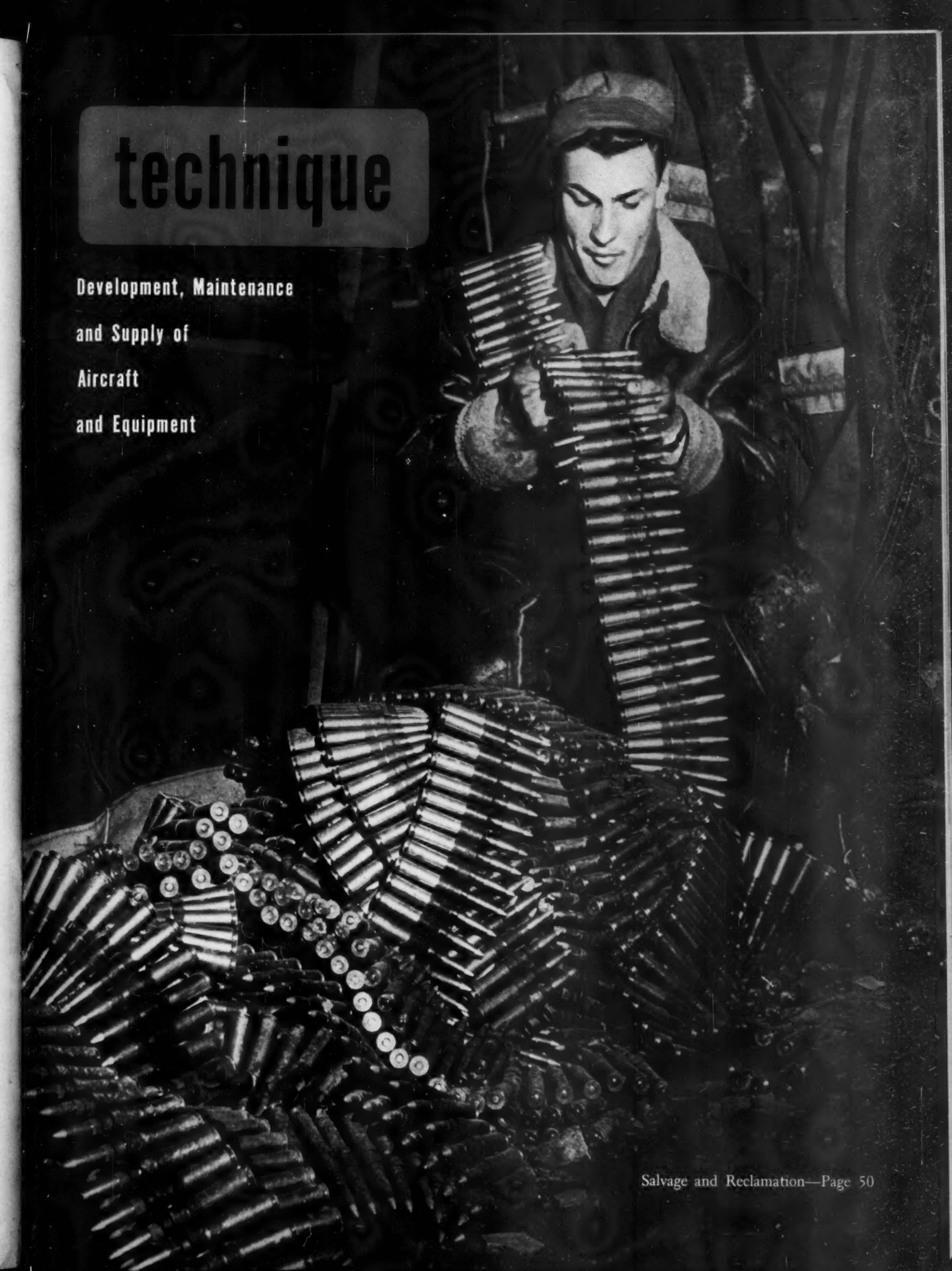
Sgt. Davis Mulliner, 15th Air Force aerial photographer shot down over Bucharest, August 26, 1944: "I don't think any of us could have held out if it hadn't been for the Red Cross and our Red Cross parcels. They brought us our only American cigarettes and chocolate and reminded us we were still in contact with home. When bartering for eggs and other luxuries, we found the cigarettes and other items worth a hundred times their regular value."

Germans on AAF

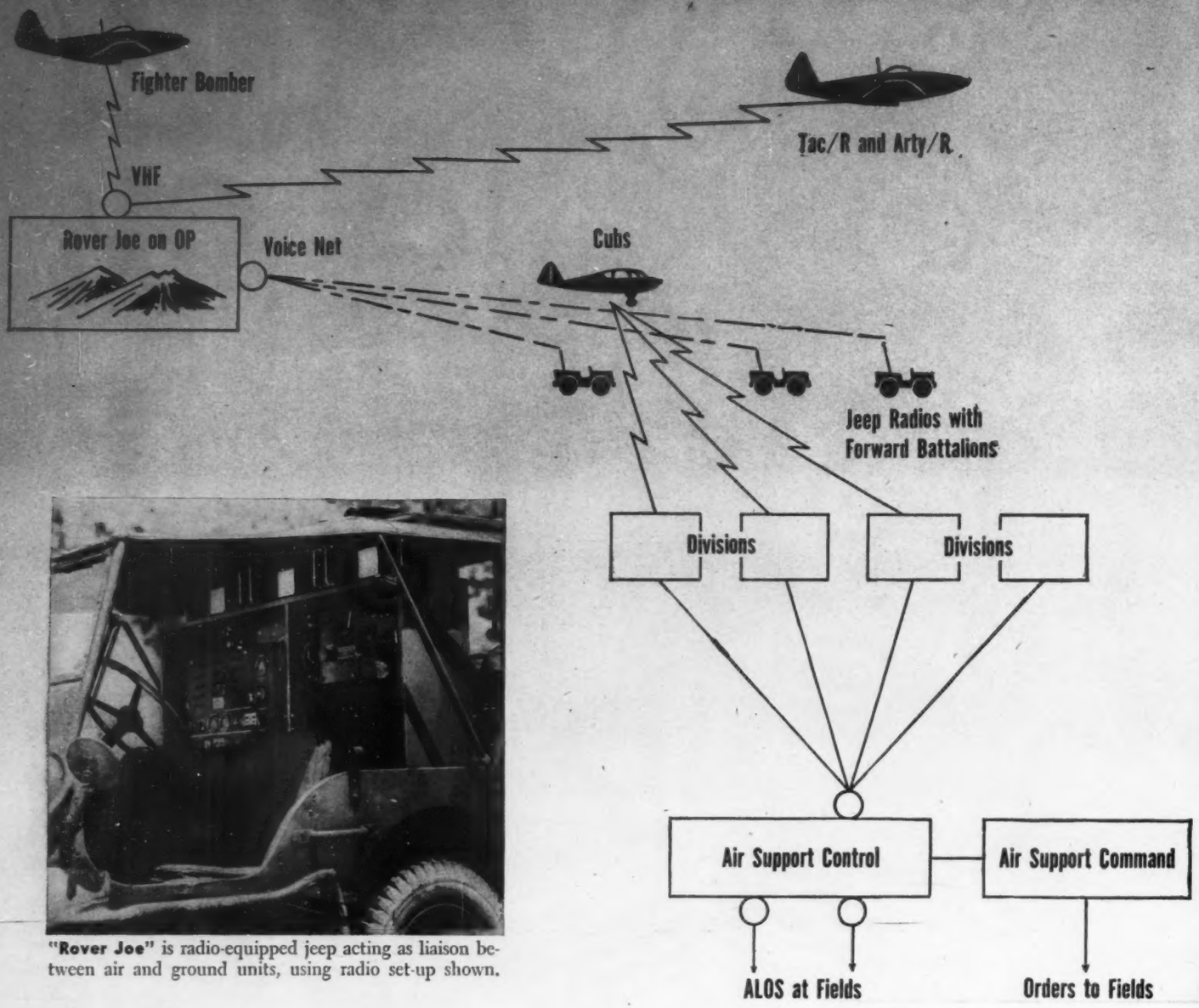
Lt. A. P. Howard, P-51 pilot shot down over Giessen, Germany: "The Jerries called us 'terror fliegers' and gangsters, and baby killers, and the goon (German) civilians in some cases were pretty rough with flyers they rounded up. But they knew we were good; we had them scared and the know-how to command respect. What made me laugh was their complaint we weren't playing a fair game. A Luftwaffe officer said they would be glad to fight us but we always sent out too many planes." ☆

technique

Development, Maintenance and Supply of Aircraft and Equipment



Salvage and Reclamation—Page 50



"Rover Joe" is radio-equipped jeep acting as liaison between air and ground units, using radio set-up shown.

"Rover Joe" In Air-Ground Tactics

"Rover Joe! Rover Joe! This is Green 3. What have you got for us?"

"Green 3, this is Rover Joe. There is a machine gun emplacement about ten degrees north of hill 501. Go get it."

"Rover Joe, this is Green 3. Roger, wilco."

Modern ground-to-air radio communication has adapted the childhood game of "Rover, Rover, may I come over," into one of the most spectacular types of air-ground cooperation yet developed by military necessity. Especially suited for operations in mountainous terrain, "Rover Joe" is a radio-equipped jeep that is well to the fore of advancing ground troops, and controls a visual sector of the front line. When reconnaissance patrols report the presence of an enemy strongpoint or fortified position that may be vulnerable to air attack, Rover Joe immediately makes contact with Tactical Air Force ground-support planes and guides the bomb-carrying fighters directly to the target. The speed and coordination with which results may be achieved surpasses any other form of AAF-AGF collaboration, and frequently the interval between a regimental request and the peeling off of strafing planes over a target is less than 15 minutes. Accuracy, too, is set at a high standard, and well over 600 Rover Joe sorties were recently flown to within 500 yards of our advancing troops without a single error being committed.

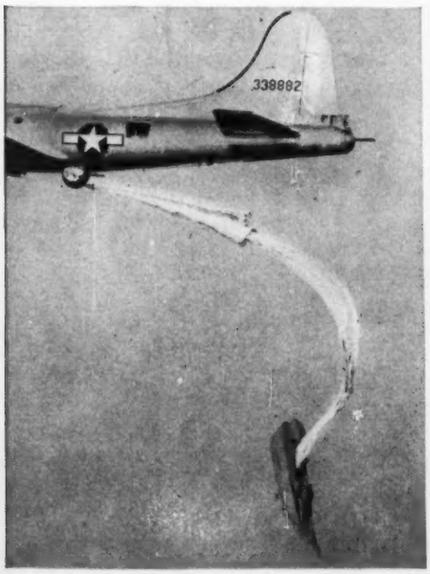
Although this type of "special request" service is a common occurrence under fluid battle conditions, the fundamental basis for the overall operation is carefully laid out 24 hours in advance at the regular daily meetings between Ground and Air. At this time, prearranged targets are agreed upon and schedules of alternate or secondary objectives are drawn up in accordance with their relative importance. As the forward controller, Rover Joe has this plan, together with the necessary maps, charts and other data, constantly before him, and it is on this timetable that he directs close cooperation missions. Meanwhile, the pilots of the fighter planes have been thoroughly briefed on the targets they are to attack, and at the scheduled time the craft are airborne and ready to make their sweeps. As they approach the front lines, radio contact is established with Rover Joe, and the planes are

"talked" onto their objectives.

With the enemy falling back rapidly, a number of L-type planes may be sent up to assist Rover Joe in observation and also to act as intermediaries to facilitate control. To simplify the procedure they are painted different colors and referred to as "Horsefly Red" or "Horsefly Yellow" as the case may be. Each craft has two men in it, and both observer and pilot are usually experienced combat men—the passenger being an Air Officer of the division being supported. Like Rover Joe, Horsefly is responsible for the proper description of the target and for guiding the fighter planes to the objective, and over a communications network embracing ground and air headquarters, bombings and strafings are effectively carried out.

"Flying Dutchman" Comes Through

As a graphic sequel to the announcement of the "Flying Dutchman," airborne rescue boat in the August, 1944 issue of AIR FORCE, Capt. W. L. Dawbarn, the very man who expedited production of the craft and who served as its project engineer at Wright Field, was recently called upon to prove the value of his device in a dramatic rescue of six American airmen from the icy waters of the North Sea. On 31 March, 1945, a call came through to the 5th Emergency Rescue Squadron in England, saying that the men had been downed at sea off Denmark and that four attempts at rescue had failed. Capt. Dawbarn, who had taken his boat to the British Isles for a demonstration, was called upon to give the Flying

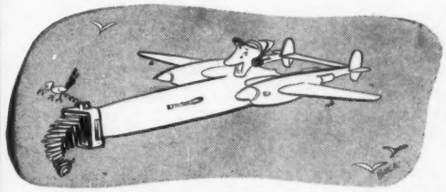


Released from under a B-17's fuselage, the airborne rescue craft plummets to the sea.

tech topics . . . about aircraft and equipment

A set of gyroscopic instruments has been installed in the YR-6 helicopter to give a level reference for night flying. Installation of an electric horizon indicator and an electric directional gyro indicator make it possible for a pilot to fly the "windmill" airplane in all attitudes in total darkness. Since the airplane has no vacuum system, an inverter system is provided to operate the instruments. . . . Personnel pick-up equipment installed in an R-4 helicopter includes a reel with 50 feet of cable which can lift a 250 pound weight at the rate of 2 feet per second. Several tests have proved the pick-up method highly practical. The device is to be installed in later model helicopters for rescue purposes.

Latest photographic airplanes are the F-5G, Lockheed; F-6K Mustang and the F-13A, a modified Superfortress. A large and extended nose on the P-38 holds new camera installations. The P-51 has three camera ports, two in the side of the fuselage. Photo version of the B-29 has most complete camera equipment of any airplane now in use. It also retains all the



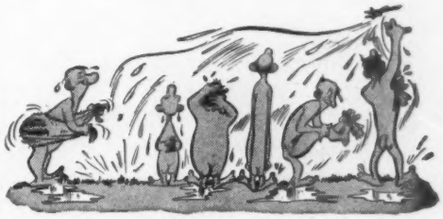
deadly fire-power of a combat Superfortress. . . . Another unique photo installation consists of cameras mounted in the leading edge of the wings on a P-51. Mirrors and oblique lenses permit taking vertical pictures.

Newest and largest aircraft generator can create enough electricity to supply a town of 3,000 people for a full day. It saves about a ton of complicated wiring over other generator systems.

A new type launching device for rocket-firing fighters permits carrying more rocket projectiles than was previously possible. As many as ten rockets can be slung under the wings of a P-51. Before, the Mustang could only carry six rockets in tube installations.

Difficulties in fabrication of metal covers for Generator Control Relays has led to experiments with a plastic cover. Simplified construction and lightweight features may mean that the new plastic covers will replace metal ones.

An experimental combination spotlight and floodlight differs from existing types in that focusing is accomplished by moving the lamp bulb rather than adjusting the lens and dimming is accomplished by rotating a polaroid filter in lieu of a rheostat. These features adapted to cockpit lights will reduce their size and simplify operation.



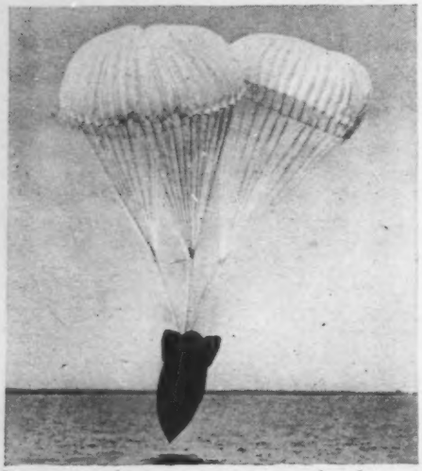
AAF personnel overseas, who long for a good hot or cold shower will get just that when tests are completed on an engine-driven portable shower now being fabricated. Having a capacity for 90 gallons of water per hour, the machine is portable by air, will be shipped to advanced bases.

To guard against fungus attack a plastic lacing cord for use in binding harness bundles is being tested. The cord, highly resistant to fungus growth, possesses a tensile strength of 2,500 pounds per square inch.

To provide permanent records of altitudes during all training flights, a new type barograph has been designed for installation in all training aircraft. The barograph (Type B-2) is an aneroid instrument and records pressure altitudes from 1,000 feet below sea-level to 50,000 feet in the stratosphere. . . . AT-6C and AT-6D training airplanes have been modified as blind flight trainers. Additional blind flying instruments have been added to the rear cockpit instrument panel. Approximately 400 of these airplanes with the new cockpit arrangement are to be made available for training purposes.

The versatile jeep, which does everything but eat hay, now is being modified as a fence cutter. An electric motor-driven reciprocating shear mounted on the front bumper snaps off fence wiring with scythe-like action.

Modifications on the Air Position Indicator have more than doubled the life of this instrument for low-temperature operation. The "X" design includes a new air mileage pump having hardened steel gears with 50 per cent increased thickness and bevel gears in place of helical gears on the standard instrument. Life of the experimental model is estimated at 800 hours continuous operation in temperatures at —54 degrees C. with twice the normal rated load on the instrument.



Three parachutes open to ease the descent of the "Flying Dutchman" to the life raft.

Dutchman a realistic trial, and within 55 minutes the craft had been hooked onto a B-17 and was in the air without even pre-flighting the plane.

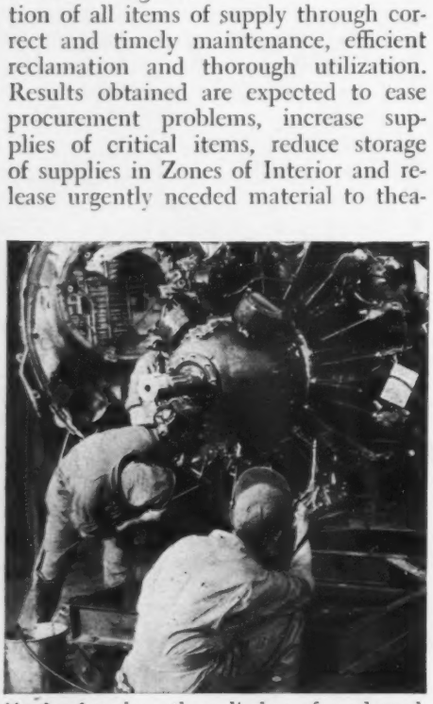
Two hours later, the bomber was over the scene of the crash and was hovering around at 300 feet trying to keep the men in sight. Four P-51s flew escort cover to keep away German jet planes who were reported in the vicinity, and the Mustangs made several dives at the life-raft to guide the Fortress directly over it. Smoke bombs were dropped, but were ineffective due to the 35-mile-an-hour wind and the 8-foot waves. After several dry runs, however, it was decided to take a chance, and on the next turn the boat was cut loose. Almost immediately the tail gunner yelled over the interphone that the parachutes were open and that the Dutchman was drifting over the survivors. By a slight miscalculation it landed 120 feet upwind of the raft, but fortunately one of the three rocket lines went right over the head of the men and they just reached out and grabbed it and then pulled themselves into the boat.

With the men finally safe in England, their story proved the boat's great value. They had gotten both engines started and had headed home, following the course laid down on the chart in the rescue craft. Encountering a severe storm, they plowed on for 33 hours until their fuel gave out. Then they cast anchor, weathered the gale and were picked up by a torpedo boat that homed on the rescue craft's Gibson Girl distress signal.

The rescue operation was the first instance wherein a project engineer of a particular piece of equipment was able to see his "baby" prove itself from start to finish.

Salvage and Reclamation

In connection with a world-wide AAF conservation, salvage and reclamation program, the Second Air Force has taken action to make all of its bases acutely aware of the urgent necessity for achieving the maximum conservation of all items of supply through correct and timely maintenance, efficient reclamation and thorough utilization. Results obtained are expected to ease procurement problems, increase supplies of critical items, reduce storage of supplies in Zones of Interior and release urgently needed material to theatres of operation.



Mechanics clean the cylinders of a salvaged Thunderbolt engine before its re-installation.

According to Brig. Gen. Harold A. McGinnis, deputy chief of staff, maintenance and supply, 2nd Air Force, progress of the salvage activities has already doubled the previous level of savings, and when the drive has been in operation several months more it is anticipated that maximum economy of material will be attained.

At overseas bases it is axiomatic that no crashed airplane that can be reached by a salvage crew ever goes to waste. Planes are hauled back, whole or in part and repaired or cannibalized. Operating around the clock, reclamation crews cut rivets, remove screws to extract usable instruments, take off turrets, landing gear, interior equipment and the Dural skin of the craft itself. Cables, pulleys, fairleads and wires also are fed back into supply.

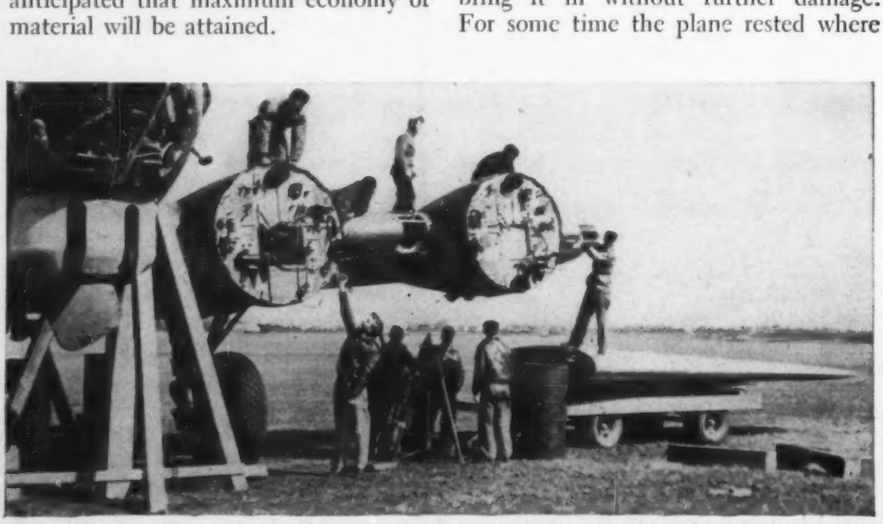
Completely stripped skeletons are taken to Quartermaster salvage yards for shipment back to the States where their metals go into new planes.

In the 8th Air Force alone, it has been estimated that over $120,000,000 has been saved for the AAF by such operations. An important phase of the work is the reclamation of unused .50 caliber ammunition (see Technique cover) taken from damaged planes.

Wing Repair by Aircrew

A group of American airmen, interned in Sweden when their B-17 made a forced landing on neutral territory, have been able to accomplish a complete wing change on their Flying Fortress, using parts from an aircraft scrap pile and the few tools they were able to obtain locally. Although trained for flying and not for ground echelon maintenance, the men have performed a job that would have done credit to any repair depot.

It all started a few months ago when Flying Fortress No. 42-39994 limped into a little airfield in southern Sweden, with its left wing the victim of a 20 mm shell. Both engines were knocked out and the main spar was seriously weakened, but the pilot was able to bring it in without further damage. For some time the plane rested where



These airmen, interned in Sweden, are adjusting a new wing panel on their Flying Fortress which had been damaged in combat and was forced to make a landing on neutral territory.

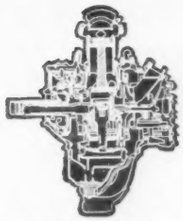
it had come to a stop, but when other crippled bombers also found haven nearby, it was decided by members of the crew that with an undamaged wing available, their B-17 might be repaired and made airworthy once more. Accordingly, a complete panel was salvaged from one of the refugee planes, some interned flight engineers were recruited for technical assistance, a few tools were borrowed from a nearby airline and work began.

T/Sgt. William E. Gregory, who had had some previous factory experience with wings, was put in charge. The first phase of the operation was the removal of the usable left wing from a wrecked Flying Fortress, and this was done by jacking the fuselage up with home-made cradles and chocks and removing the landing gear and outer wing panel. The inner wing was then supported by means of barrels placed end on end, while a truck was parked under the wing between the supports in order to receive the wing as it was gradually lowered.

Next came the job of removing the battle-damaged wing from their own bomber, and this was accomplished by means of an overhead hoist consisting of two ten foot high uprights and a connecting cross beam with ½" flexible cable in a block and tackle. Using this improvised hoist at the inner end with an engine hoist at the outer end, it was possible to lower the wing without damage.

To place the useable wing in position, the same equipment was employed, with the engine hoist at the outer end located so that the wing could be swung inwards after it had been lifted. Taper pins were then inserted to hold the panel in place, and although old pins were used to fill the holes at first, they were later removed, one at a time, and new pins reamed in and secured.

With the wing panel adjusted to the fuselage, the big problems involved were the connection of engine instruments and re-wiring of electrical systems. The instrument picture was complicated by the fact that pressure-types were used in the replacement wing, while autosyn instruments had been used in the original. By cutting holes in the fuselage at the wing root, however, salvaged pressure lines were passed through to the pressure-type instruments from the scrapped airplane, which had been installed in the cockpit, and efficient operation was achieved. Wiring difficulties were overcome through the use of special test-



maintenance tips . . .

from the crew chief's stand

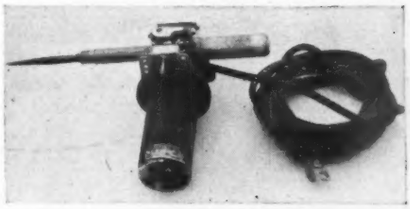
Airplane tires may laugh at abuse, but frequently end up with their sides split. To promote a long and happy life for these critical items of AAF supply, pay particular attention to the following points:

1. Keep runways clean and free of abrasive material, bits of metal and glass. Watch for chuck holes and fill at once.
2. Change tires when tread becomes barely visible, or cuts, breaks or blisters appear.
3. Tell your pilot to avoid sharp turns or skid burns unless the safety of the plane is endangered.
4. Inflate correctly according to TO 04-10-1.
5. Cover tires with anything available when working on engines, to keep fuel and lubricants away from the rubber.

If synthetic tires are in use, don't rush for the standard S-1 tire removal kit merely because a few landings have resulted in "checking" in the sidewalls. Although the condition resembles the effects of sun and weather on natural rubber, it is quite normal for synthetics and does not impair its strength. If cracks become deep, however, be sure to remove.

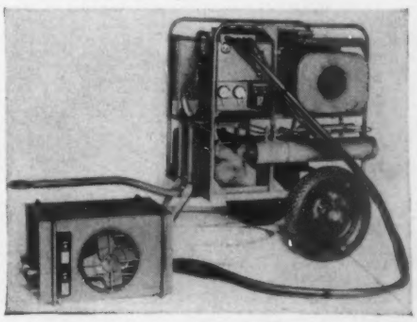
On dual wheel gear, inflate tires evenly to the same height. Also, use tires of identical manufacture and degree of wear, if possible. With dual nose gear, use regular inner tubes, since double seal tubes are reserved for single wheel installation.

Stat Control speaks volumes where interchangeability of parts is concerned, and a never-before-published AAF numerical index for property classification is now available under S-00-1 on form 65-507. The parts index uses the same numbers as those in all official stock lists, and also includes inactive items, providing handy reference to more than 635,000 part numbers. Instructions for full use of the series are contained in the introduction to the first volume, and each succeeding volume contains approximately 200 stapled sheets for inclusion in standard TO binders. Cumulative monthly additions, numbers S-00-1A, -1B, etc., will supersede previous addenda and list new items and deletions, while volumes of the basic publication will be reissued whenever the size of the addenda requires.



Take an oil cooler flat actuator power unit G.E. model No. 5BA25HJ16A from a wrecked P-38, a ⅜" x 8" plumb socket wrench extension WF-18 and a type B-11 toggle switch assembly — put them together in the proper proportions and you'll be the pleased user of a combination electric screwdriver and socket wrench. The salvage tool, which is suggested by Cpl. James F. Vystercil of an 8th Air Force Service Command Unit in England, may be made by following a few simple directions. First, remove the relay box and the worm drive from the actuator and take off the outside shield from the worms, disconnecting the wires. Next, take the socket wrench extension and lathe the female end to ⅜" and drill a 3/16" lock hole through the shaft. Insert the shaft so that the male end extends through the smooth end of the brass tube shaft, drill a 3/16" hole through the threaded end of the tube in line with the hole in the extension, and lock the two parts with a 3/16" steel pin. To make a handle for this part, seal the end of the shield and mount it over the threaded portion.

A limited number of the portable air coolers designed for ground cooling of B-29 interiors may be made available to some air evacuation units operating in hot climates. The apparatus is believed to be satisfactory for cooling evacuation aircraft during loading, unloading, and servicing. Requirements and priority for the cooler should be established through the usual AAF supply channels. Official designation is Cooler, Portable, Airborne, Type A-1, specification No. 40742, Stock Number 8200-17200, and it is supplied by Class 19E of ATSC.



ing instruments made from discarded radio parts by T/Sgt. Victor R. Marcotte and S/Sgt. James C. Curtis. And after superchargers had been replaced, fuel cells repaired, engines mounted and landing gear installed, Flying Fortress No. 42-39994 was pronounced fit for air travel and successfully test flown.

In addition to those already mentioned, special credit for their part in the job goes to S/Sgt. Bailey E. Kelly, S/Sgt. Donald S. Courson, T/Sgt. Jerome Wodin, T/Sgt. James J. Duggan, S/Sgt. Ziggie L. Lozlosky, S/Sgt. William E. Marr, S/Sgt. Raymond J. Long, T/Sgt. William B. Quimby, S/Sgt. Matthew C. Schmitt, S/Sgt. Manuel J. Silva, S/Sgt. Louis Stokosa and S/Sgt. Wayne A. Peterson.

Quick Color Printing Process

Not long ago, a B-25 fresh from the assembly line had to make a forced landing. Inspection revealed a smudge-like substance on an engine part, and a photographer from the Photographic Engineering Branch, Technical Data Laboratory at Wright Field was flown to the scene to take pictures of the suspected part. In 80 minutes after his return, the first color transparency was ready, and three hours later, 25 color prints were on their way to various engineers for study. Thus, within a phenomenally short time, color prints were made available for technical examination and the bomber was able to be repaired and released for its combat assignment without further delay.

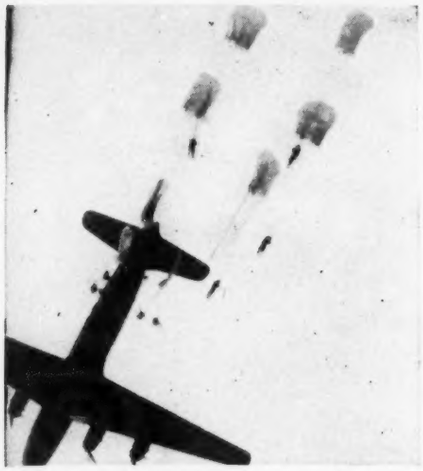
The new printing process, which simplifies color reproduction techniques to the point where they are comparable to those used in black and white pictures, is called "Gasparcolor," after Dr. Bela Gaspar, its inventor, and not only saves time, but affords more detail and color fidelity in the prints themselves. The paper used is a monopak with dyes incorporated in three emulsion layers on an opal acetate base. After a single exposure from a color transparency, the paper is developed like any black and white print, while red, green and blue light, imposed on the paper by the color transparency, is recorded in each emulsion layer as a negative silver image. The next step is a dye bleach bath which destroys the dye wherever there is a metallic silver or negative image, thus leaving a positive print with true colors. Because a new type of dye destruction method is used in each emulsion layer, Gasparcolor is more brilliant in hue than a process which relies on dye coupling. The image is exceptionally sharp and the rendering of highlights and shadows is particularly accurate.

At present, the AAF is using Gasparcolor to assist in the aircraft engineering and manufacturing program, but other developments of color reproduction methods will find broader applications in general Air Force photographic requirements. As an engineering aid, the technique has proved itself of great value in recording various stages of metal corrosion, showing the effects of incendiary bullets on airplane hydraulic fluid containers by indicating the elements of combustion, and illustrating the results of different cleaning agents on metal parts. In addition, it reveals the fading of camouflage materials and paint finishes after periods of exposure to sunlight or ultraviolet light, and gives a means of color contrast in studying icing conditions on propellers, wings and engine nacelles.

Vital researches in aero-medicine have been advanced, too, by the reproduction in full natural color of physiological subjects, such as the pallor of a man being whirled in the centrifuge, the irritation caused by various toxic agents applied to human skin, the manifestations of frostbite due to exposure at low temperatures, and the characteristics of injuries from gun shots or flak. Numerous charts and graphs in coded colors, which formerly had to be reproduced in quantity by hand, are today being made at a fraction of the cost and in much less time.

what's wrong with this picture?

Keep this under your wing, but the four men shown playing with firepower are making a mockery of rocketry. Six of these projectiles are clearly visible and there's at least one boner being pulled for each. Before drawing a bead on Page 55, however, for a side-by-side bracketing of their errors, train your sights over every detail and you might find a few more misfires. The wrong-doers, who are better actors than cautious crewmen, are (from left to right) M/Sgt. Julian S. Pollard, S/Sgt. James E. Brooks, T/Sgt. Charles J. Lamb and Pfc. Robert O. Thomas, all of the 4000th Base Unit, Wright Field.



Paratroops hit silk over proper drop zone as cockpit "Viewer" guides pilot on course.

Flight Strip Viewer

Pilots who fly troop carriers in paratroop and airborne infantry operations, are to have a special device riding with them in the cockpit which will provide a continuous briefing right up to the drop zone. The new equipment gives a moving picture of the terrain below, from take-off to "jump" point, enabling flyers and navigators to reach positions with great precision.

The Flight Strip Viewer is a streamlined box which contains two rolls of positive transparencies which pass on rollers over two fluorescent screens. One screen shows a vertical view of the ground below, while the other shows an oblique view of the terrain directly ahead. By glancing at one and then the other, a pilot can easily check and maintain correct position. The fluorescent screens give the transparencies a low-level illumination simulating moonlight, and also produce a third-dimensional effect, while a course line is painted on the transparencies to serve as a guide to the exact dropping point.

The viewer fits snugly into the throttle quadrant between pilot and co-pilot, and the film runs at a speed range of between 50 to 400 miles per hour, in accordance with the speed of the plane. An electric motor runs the film over the rollers and is synchronized to the throttle to achieve this result, while manually operated knobs permit adjustments for tail winds and other flight factors. Transparencies for the viewer are made from high-altitude photos taken by recon squadrons. Various check points, such as roads, streams and rock formations are marked with a special fluorescent chemical which makes them stand out clearly, and mileage indices on the edge of the film tell the pilot the actual distances to the target at all times.

The apparatus was developed by the Equipment Laboratory engineers, ATSC, and has already been tested by more than 100 combat pilots who are unanimous in its praise. It will soon go into production, along with several modifications for use in high altitude bombardment and for use with radar in either contact or instrument weather.

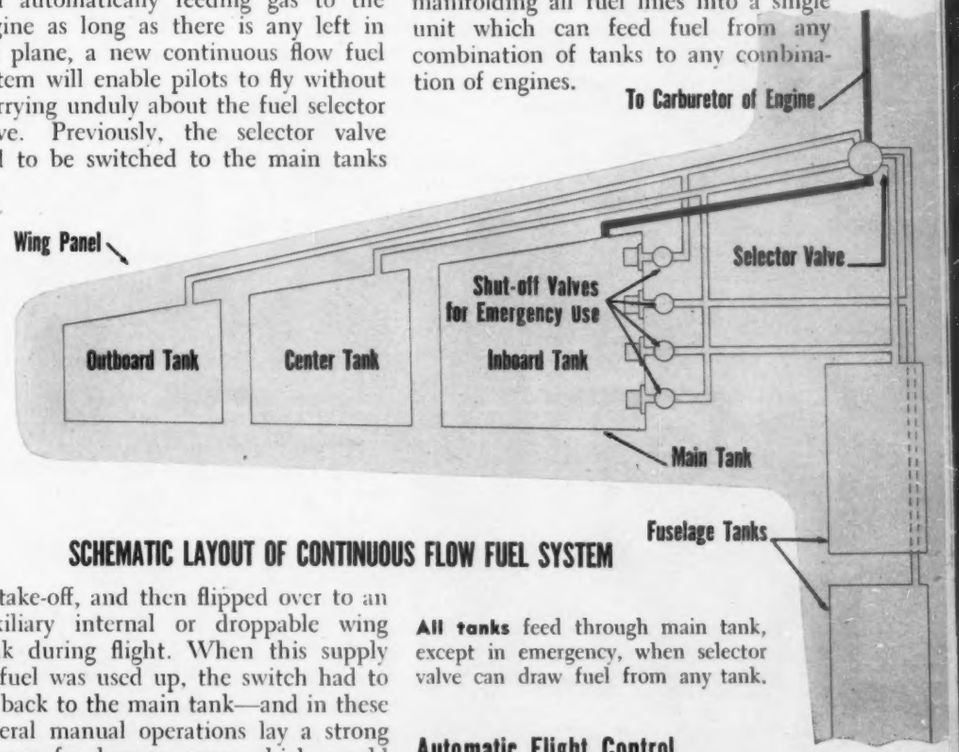
Continuous Flow Fuel System

Maintaining a maximum supply of fuel in the principal tanks at all times and automatically feeding gas to the engine as long as there is any left in the plane, a new continuous flow fuel system will enable pilots to fly without worrying unduly about the fuel selector valve. Previously, the selector valve had to be switched to the main tanks at take-off, and then flipped over to an auxiliary internal or droppable wing tank during flight. When this supply of fuel was used up, the switch had to go back to the main tank—and in these several manual operations lay a strong chance for human error which would place a plane in serious trouble.

To guard against such contingencies, the new system pipes all fuel through the main tank and then into the engine. A series of fuel-level valves inside the main tank automatically feeds the gasoline in proper sequence from each auxiliary tank, and as long as any fuel remains in these auxiliaries, the main tank will be full. This means that a pilot can jettison his wing tanks at any time and still have maximum fuel in the main tank and built-in auxiliaries.

The fuel level valve floats on top of the gasoline in the main tank, and when the supply drops below a certain level it automatically opens to allow the tank to be refilled by flow from auxiliaries. Booster pumps, similar to those used in conventional systems, eliminate the danger of vapor lock by pressuring the fuel through pipe lines, while the selector valve has an emergency stop which permits fuel to be piped from any tank direct to the engine. This latter device is a safety mechanism that is operated manually and is used only when the main tank is damaged or when the system becomes defective.

Although installed initially in P-47s, a comparative system has been worked out for the A-26 and may also be adapted to other twin-engined planes, using one unit for each engine, with cross-feed lines. In the case of the B-29 and other multi-engine planes, the same results have been achieved merely by manifolding all fuel lines into a single unit which can feed fuel from any combination of tanks to any combination of engines.



SCHEMATIC LAYOUT OF CONTINUOUS FLOW FUEL SYSTEM

All tanks feed through main tank, except in emergency, when selector valve can draw fuel from any tank.

Automatic Flight Control

Designed for use on heavy four-engined bombers, including the B-29, a new one-hand electronic "control stick" now permits pilots to fly their aircraft with an ease and accuracy hitherto unattainable even in the smallest planes. Called a formation stick, the control is a pistol-grip lever about ten inches long mounted with an arm rest beside the pilot. It is free to move in all directions in exactly the same manner as the joy-stick of fighter aircraft, and through electronic amplification and the servo motors of the control surfaces, it turns the plane in the same direction—and in the same proportion —as the stick itself is moved.

In turbulent air, with planes flying a 'tight' formation, both pilot and co-pilot have to exert their full strength to hold their plane on a steady course. With the new Automatic Flight Con-

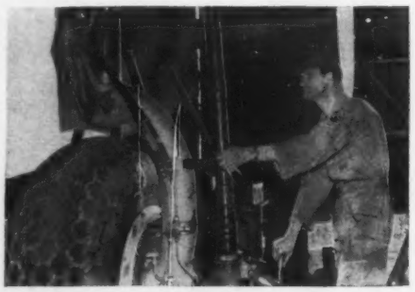
on the line

with mechs around the world

Reports from the 12th Air Force indicate that the new technique of mounting a K-25 camera on a special bracket under the wing of a fighter plane so that pilots may photograph their own bombing strikes (see Technique, January, 1945) has been received with enthusiasm by group and unit commanders. By means of the installation shown above, photo-interpreters now have a measuring stick for scoring the work of fighter-bombers, and are able to make accurate, rapid bomb damage assessments on targets attacked during actual hostilities. The location of the camera, the mounts, cowling and wiring were the work of T/Sgt. Graydon G. Branch and Sgt. John C. Stine, both assigned to a MAAF Air Service Group. Shown in the picture is M/Sgt. (now 2nd Lt.) John H. Haynes, College Park, Ga.

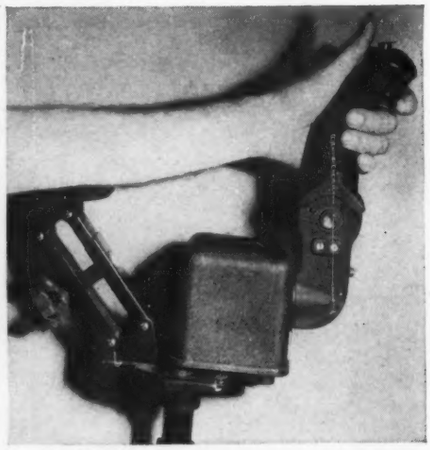
This back-type boat and jungle kit container, demonstrated in a P-38 cockpit by its designer, M/Sgt. Paul Seaton, foreman of the parachute department of a 13th Fighter Command base in the Pacific, permits pilots to fly on long missions without experiencing discomfort and fatigue. The container allows the pilot to sit on a cushion rather than the hard boat formerly used, and lowers him three to four inches in the cockpit so that he doesn't have to bend over for head clearance. The new location cuts wear and tear on boat and jungle equipment to a minimum, and affords a cushion effect back-rest with little or no chafing. It is neatly packed and is tied to one static line. Also, since the bottom of the container rests on the parachute cushion, there is little weight on the shoulders.

Having orders to repair the pump of the air raid warning system of his base in India, S/Sgt. William W. Lemke, Chicago, Ill., found that he did not have the necessary spare parts. Scrounging around among scrap piles, however, he was able to find enough odds and ends to enable him to completely rebuild the defective machinery. After 3,000 hours of operation, the pump was still functioning.



When scores of B-24s began arriving at an ASC depot in England, all requiring the removal of their landing gear struts for a bearing race modification to keep the bearing retainer from slipping, mechanics were compelled to clamber on wooden platforms, propped under the wings, in order to remove the 620-pound struts by hand. To speed up this modification, M/Sgt. Fred Covert of Corsicana, Texas, designed a landing gear strut remover jack (shown above) which enabled two men to do the work of five—in less time and with greater safety. Salvaging a hydraulic finger-lift jack mounted on four rubber wheels, Sgt. Covert constructed several steel sections, which, when fitted onto the jack, gripped the strut and lifted it so that a man could remove the retaining pin. The entire strut was then lowered and taken away for repair, permitting l.g. brake inspection as well.

This master electrical test panel, according to personnel of the 15th Air Force in Italy who have benefitted from its installation, can do anything except talk. It was made by M/Sgt. Earl L. Harris, Baldwin Park, Calif., shown conducting test.



The Pistol-grip swivel and arm rest on the automatic flight control stick help reduce pilot fatique on long over-water missions.

trol, small but powerful booster motors take the place of muscles, and flyers are able to achieve a 100-pound pull by moving the formation stick with a one-pound force. The instrument not only greatly reduces pilot fatigue and makes possible tighter formation flying, but also simplifies the task of evasive action, wherein changes of flight direction are frequently made.

The formation stick was developed jointly by the Air Technical Service Command and the Minneapolis-Honeywell Regulator Company, and its design was based on an engineering combination of the C-1 automatic pilot and the latest bombsight. Borrowing something from each, with innovations in electronics, the instrument is gyro-stabilized, with sensitive meters and relays to transform the slightest touch into action. After a normal take-off and a flight on automatic pilot, if the flyer wishes to change course or altitude, he merely presses the button on the stick and the craft is completely under his control, operated almost effortlessly by his fingers on the swivel.

Oxygen Warning System

Combat experience of heavy bombers flying high altitude missions has demonstrated that the interphone system of conducting periodical oxygen checks is not always reliable, and at the suggestion of the 8th Air Force, a central warning system has been developed to provide immediate information on the physical well-being of each member of the crew. By combining the functions of the Type T-1 Oxygen Combination Indicator and the Oxygen Central Warning Panel, the monitor of the panel can see at a glance when the respiration of a particular

airman has fallen below normal, when he has become disconnected from his oxygen supply or when his oxygen regulator is malfunctioning.

The Oxygen Combination Indicator is a composite instrument incorporating a pressure gauge and a flow indicator within a standard size aircraft instrument case. On the face of a single dial, pressure is indicated by a pointer in hundreds of pounds per square inch, while flow is shown by a whirler disc, the luminous sectors of which rotate alternately into and out of view with each cycle of respiration. In addition, the instrument contains an electrical contact switch assembly which makes and breaks a complete circuit with each breathing cycle, and activates the Central Warning Panel accordingly.

The Central Warning Panel comprises a time delay mechanism and a series of warning lights arranged in the same pattern as the plane's oxygen stations—one light for each crew position. This time delay circuit is so arranged that when a crew member suffers an attack of anoxia, the warning lamp associated with his position will instantaneously become lighted, giving a visual indication that emergency action is to be taken.

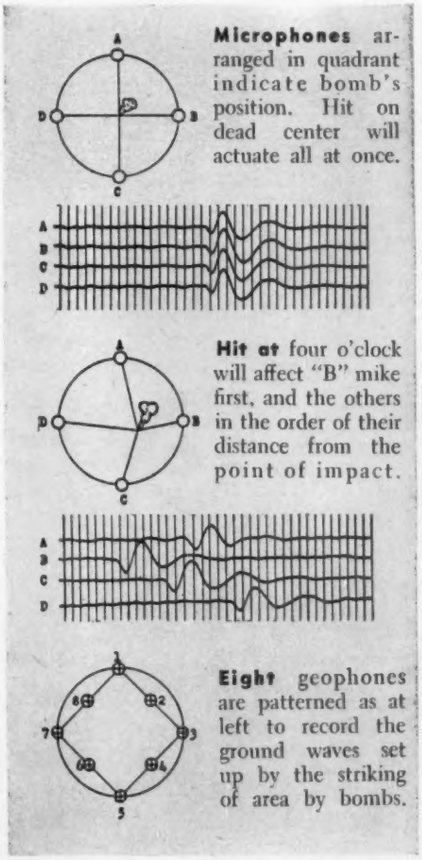
Soon to be released as standard equipment, the warning panel is intended for installation in the navigator's compartment. It is designed, however, to be connected in any dual compartment of the airplane.

Bomb Scoring Training Method

A revolutionary method of scoring bomb hits in bombardier training by means of a sonic device and a "hyperbolic scoring board," has now eliminated human error in the recording of practice bombing results and saved the AAF thousands of dollars formerly spent annually to purchase camera equipment and film.

In sonic scoring, four low-frequency microphones are placed around the target in a square pattern, and each microphone is wired to an individual reflecting galvanometer in a recorder some 2,000 feet away. The time of arrival of the sound wave from a bomb explosion is recorded, and thus an indication of the bomb's position is provided. The sound wave from a dead-center hit, for example, will arrive at all four microphones at the same time, while a bomb hit off center will actuate the mike nearest it first, and then the other microphones in the order of their distance from the bomb impact.

This method of scoring also provides for eight geophones (underground listening devices) to be set up, one adjacent to each microphone and one halfway between each. When a bomb hits, the resulting ground wave will travel at a higher velocity than the air wave and actuate one or more of the geophones, thus starting the recorder in time to chart the air wave when it reaches the microphones.


A
B
C
D
Microphones arranged in quadrant indicate bomb's position. Hit on dead center will actuate all at once.
Hit at four o'clock will affect "B" mike first, and the others in the order of their distance from the point of impact.
Eight geophones are patterned as at left to record the ground waves set up by the striking of area by bombs.

The equipment is inoperative until a bomb strikes the ground. Then, by means of an electronic control, the recorder operates for one second and immediately shuts off. For the purpose of bomb identification, a clock-face is automatically photographed at the end of each bomb hit record on a photosensitive tape, and the bombardier in his airplane need only note the impact time of his release with a special stop watch. Results may then be wired back to a central recording and plotting station where the hyperbolic scoring board instantly interprets them on a table-like structure on which hyperbola, or curved lines representing sound waves from each microphone, are drawn after each bomb falls. Where these lines intersect is found the bomb hit, and the measure of the distance from the center of the bomb target range to this intersection gives the margin of error of the bombardier's release.

The sonic scoring device and the hyperbolic scoreboard were perfected by Maj. Edward McKaba at Midland Army Air Field, Midland, Texas, who received the Legion of Merit for his work.

WHAT'S WRONG with the picture on Page 52

1. Starting off with the obvious, under no circumstances should the engine be warming up during rocket installation or removal. Not only should there be no men working around a plane with its engine running, but with the prop turning over, the whole electrical system is "alive" and the slightest mishandling of rockets might set one off.
2. The mechanic who is down on one knee trying to remove the fin bolts may be writing 'fin' to his AAF career, since the removal of one of these 5-inchers is a two-man job. What's more, he should never unfasten the tail bolts first, because the missile may drop down and set off the rocket firing trigger.
3. The master sergeant who is directing operations while using a rocket as a rocker, will find that the weight of authority has bent the fins all out of line, if it doesn't snap them off entirely. And while we're putting our foot down, will the man in the middle kindly lift his shoe from the warhead?
4. Rubbing a rocket's nose against concrete, as the man on the extreme right is doing, is a sure-fire way of kicking off the arming mechanism. And even if he doesn't, dragging it by its fins may cause it to go wide of its mark.
5. With rockets in their sockets, 'tis folly to stand in front of them, like the mech is doing as he adjusts the nose brace on the inner rocket.
6. Coming to the foreground, the haphazard manner in which these projectiles are stacked can easily cause damage to fins, resulting in improper firing.

AAF QUIZ

Here is your monthly brain-twister. Chalk up five points for each correct answer. A score of 90 or above is excellent; 75 to 85, good; 60 to 70, not too bad; below 60, tsk, tsk. Answers on Page 63.

1. K-17, K-18 and K-20 are important tools of one AAF trade. They are
A. *Bombsights* C. *Sun glasses*
B. *Cameras* D. *First aid kits*

2. The P-63 Kingcobra looks like an overgrown
A. *P-40* B. *P-47* C. *P-38* D. *P-39*

3. In AAF language, the abbreviation UR means
A. *Unconfirmed rumor*
B. *Unauthorized reserve*
C. *Upwind range*
D. *Unsatisfactory report*

4. The President of the Army Air Forces Aid Society is
A. *General of the Army H. H. Arnold*
B. *Mrs. H. H. Arnold*
C. *Mr. Robert A. Lovett*
D. *Capt. E. V. Rickenbacker*

5. The 1941 population of Manila was approximately
A. *100,000* C. *700,000*
B. *300,000* D. *1,200,000*

6. Japan's largest aircraft plant is Mitsubishi Rokuki. Where is it?
A. *Tokyo* C. *Nagoya*
B. *Kobe* D. *Osaka*

7. An individual who served outside the U. S. between September 8, 1939 and December 7, 1941, may wear a bronze service star on his American Defense Ribbon.
A. *True* B. *False*

8. The most accurate and deadly type of antiaircraft fire is
A. *Continuously pointed fire*
B. *Predicted concentration*
C. *Barrage fire*

9. An officer is authorized to wear the Good Conduct ribbon he earned as an enlisted man.
A. *True* B. *False*

10. An enlisted man or junior officer will get how much mustering out pay if he has served more than 60 days at the time of separation and has been stationed overseas.
A. *$100* B. *$200* C. *$300* D. *$400*

11. One of the most thoroughly bombed spots in the Pacific prior to its capture by American troops last February is commonly known as "the Rock." What is the correct name of the place?
A. *Fujiyama* C. *Borneo*
B. *Suribachi* D. *Corregidor*

12. The Zeke 52 is a Jap
A. *Twin-engine fighter*
B. *Twin-engine bomber*
C. *Four-engine transport*
D. *Single-engine fighter*

13. The frangible bullet now used in target practice is fired at specially equipped
A. *P-38s* B. *B-17s* C. *A-26s* D. *P-63s*

14. The P-47N has a tactical radius of how many miles?
A. *500* B. *700* C. *1,000* D. *1,500*

15. The principal sources of magnesium, which is being used increasingly in airframes and engine parts, are
A. *Dolomite and sea water*
B. *Bauxite and turpentine*
C. *Dural and milk of magnesia*
D. *Tin and caustic soda*

16. In relation to the wheel of the B-17, the wheel of the B-29 is
A. *Larger* B. *Smaller* C. *Same size*

17. Headquarters I Troop Carrier Command is located at
A. *Stout Field* C. *Maxwell Field*
B. *Barksdale Field* D. *Chanute Field*

18. Maximum wing loading for commercial aircraft is in the range of 40 to 55 pounds per square foot. What is it for bombardment aircraft?
A. *20 to 25* C. *70 to 80*
B. *40 to 50* D. *100 to 120*

19. To the Air Transport Command, one of the important spots of this world is Accra. Where is it?
A. *On the west coast of Africa*
B. *On the Mediterranean coast near Cairo*
C. *On the northeastern coast of Brazil*
D. *On Ascension Island*

20. Identify this airplane.

THE INFANTRY LOVES IT

(Continued from Page 12)

The last bomb run is completed. The P-51s pull away for a look at the target before they come in again, this time for strafing. Now comes the dangerous stage. In a moment our tanks will move up and the infantry will begin an advance up the side of the hill behind the tanks—and the pilots must be dead certain not to strafe our own troops and machines in the thick smoke. The full attack is about to begin.

"Rhinestone to Red Leader. Do you see the panels marking our front lines?"

"Red Leader back. Roger; don't worry, we see them."

"Rhinestone back. Go in and finish 'em off. Give the boys a holiday. The target is still yours, but after the fourth pass we'll begin moving up the side of the hill under cover of your strafing. Watch those dugouts on the north slope. They may still have something up there. Make your runs south to north, or west to east."

"Roger, Rhinestone. Wilco."

The transmission is hardly over before the fighters come whistling in at 350 miles an hour with their .50s blazing. Some infantrymen jump hurriedly back in their foxholes as the empty shell casings shower down. Then, looking sheepishly at their comrades, they smile and turn to watch the show the air force is putting on for their benefit.

Red Leader and his boys are really enjoying their work now. We listen in as the air crackles with their excited conversation: "Good work, Joe. You drove him right through the foxholes."

"Look at those bastards run."

"Hell, don't look. Go in after them."

"There's some about three o'clock, Sam. Go get 'em."

"Say, they're running all over. Hell, watch the north slope. They are firing right at you.

"The hell with 'em; I'll get 'em, Red."

"Look! Look! The whole damn thing blew right up in their faces."

"Damn it, George, I told you to drop a bomb on that hill. There's machine gun fire coming from it now."

"Forget it Chief. I'll get it now."

The planes are circling and diving right over our heads. Puffs of fire are sprouting all over the place, from 150 yards in front of us to the whole top of the hill. Smoke, red tracers and flames are everywhere—on the objective. The ground boys are getting anxious; they want to take part in the show now. The planes have cleared the way for them.

The planes are racing across the hill again. Fires. Smoke. Deafening chatter of machine guns. Cheers. Yells. More smoke. Little spurting clouds of smoke, all over the hill.

Now the troops move. "Rhinestone to Leader. The boys are moving up the left side of the slope. Don't make any passes on the left side of the hill. We are going to throw in a little mortar to keep 'em guessing. Is that clear?"

"Red Leader to Rhinestone. Roger."

This is the real thing now. Full co-

ordination of all air and ground units.

"Rhinestone to Red Leader. Work over that bald spot on the top of the ridge."

"Roger. We'll massage the bald spot for you, Rhinestone."

"Pay attention to those dugout positions, Red Leader."

"Roger, Rhinestone. Next flight is going in on them."

"Red Leader from Rhinestone. That last plane did a good job. There's something in there."

"Roger, Rhinestone."

Red Leader passes along the instructions to his pilots: "Last plane: Hit that area again. Keep a sharp lookout for them running along the trail."

"Watch out for the ground fire, George. They are firing head-on. See if you can get that damn thing."

"That grass fire over on the hill: Japs."

"Look at that devil run for the wooded area. Don't let him get away."

"Which way's he running, east or west?"

"South, south, you dumb bunny. Go get him. Get him. Get him. Don't let that guy get away. There he goes, dammit! Go in and get him."

"I got him now. Take it easy. If I don't hit him I'll sure scare him to death."

We have more instructions for Red Leader. "Rhinestone to Red Leader. Our troops just got some fire from the hill, two o'clock from the bald spot."

Red Leader passes the dope along to his boys. "OK, let's get Baldy's friend over there, gang.—Dammit, Sam. That was too close to our troops. I told you not to fire if you don't know where our troops are."

"Hell, I saw them. I saw them."

It goes on and on, for about 15 minutes and then . . . "OK, Rhinestone, we're through. Hope we did some good."

"Roger, Red Leader. You did a swell job. The troops are up three quarters now, and moving right along. Red Leader, can you make a few dummy passes to keep the Nips in their holes until the infantry gets the rest of them."

"Roger; can do. It's good practice."

Already 200 Japs have been killed in this air attack, and one ammo dump, three supply dumps and seven to ten machine guns and gunpits knocked out. The infantry is taking the objective without loss of a single life. The majority of the remaining Japs are just sitting in their foxholes, bewildered and dazed—not even knowing the air attack is over until the ground troops go right into them with bayonets. As the infantry mops up, a flight of bombers checks in with us to blast the rear areas and prevent the Japs from moving up reserves and counter-attacking our troops. It's exhausting work. Tough climbing. Close coordination. But our planes on Luzon are doing it every day.

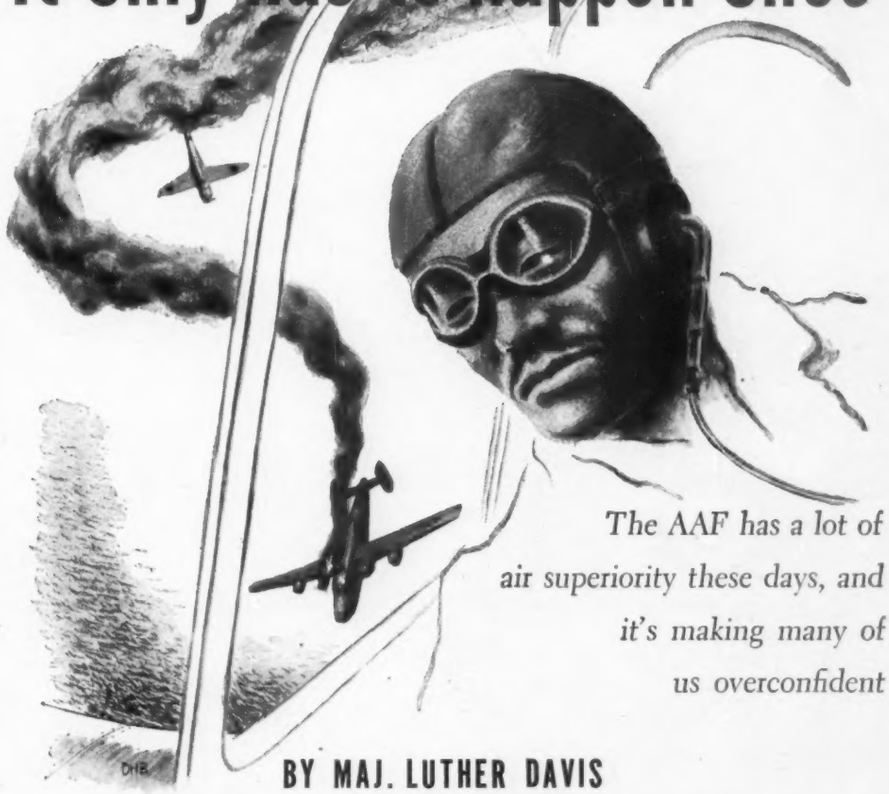
And the infantry loves it. ☆

Answers to "How Sharp Are You"

on Page 2

1. A-20s.	4. None	8. Yes
2. Three	5. True	9. One
3. 37	6. One	10. No
	7. True	

It Only Has to Happen Once



The AAF has a lot of air superiority these days, and it's making many of us overconfident

BY MAJ. LUTHER DAVIS

AIR FORCE *Staff*

There was a long-legged P-47 pilot in Europe who hadn't seen a Jerry plane in months. So he had his crew chief take the armor plate out of his cockpit, moved the seat back and relaxed; they got him with plain, old fashioned small arms fire sent up by the lowly Volksturm. Then there was the briefing officer in India who thought he could reduce his remarks about enemy fighters to the nub: "Fighters? Any fighters you see will be ours." So one of his B-25s which had turned back because of engine trouble was shot down by a Jap plane they thought was an RAF Spitfire.

A P-47 formation leader over Germany decided that we had air superiority—so he called in to his control for a new target. Blithely he gave the map name of the town he was over and gaily reported his exact fuel situation. Jerry got the idea; sent some ME109s to crowd our boys until they ran out of gas, got four P-47s without firing a shot. Similarly, one day in the Central Pacific a B-24 was having navigation trouble. The pilot looked down at that expanse of water and got a little panicky—neglected to use the code word for the island he was trying to get back to. The Japs must have monitored his broadcast, for two Zekes popped up out of nowhere. Back at base they could hear the amazement in the B-24 pilot's voice: "Zekes! Two Zekes at six o'clock!" That was the last they heard.

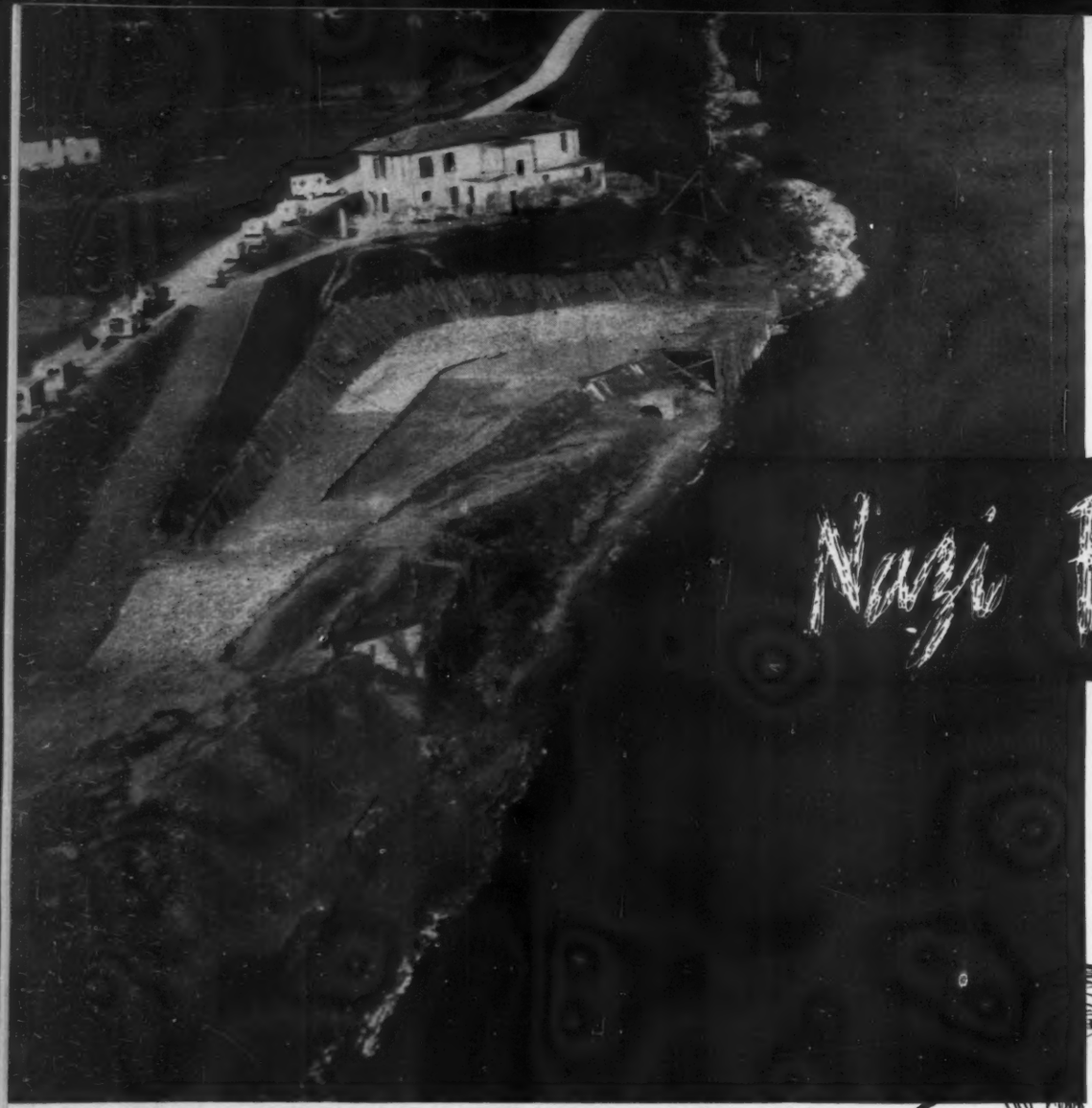
Lapse of radio discipline has caused a lot of trouble just because it's easier to talk in the clear and it often saves a lot of time to break radio silence. Like a pair of P-51s over northern Italy—the leader called his base to report that his guns were jammed and he couldn't make the strafing attack for which he'd been briefed. Jerry heard too and attacked out of the sun less than 10 minutes after that broadcast. They got away, but just by the skin of their teeth.

Radio laxity accounted for one of the most successful raids the Japs have made on any of our bases. The enemy came in low at just about the time they knew one of our formations would be landing. The warning boys said they'd picked them up all right, but had assumed the planes were friendly. "Hell," said the lieutenant in charge, "if we sounded the alarm everytime we picked up an unidentified plane, we'd be on alert all the time. Strange people are always flying around here."

Naturally, these days, pilots get sloppy about things like recognition flares and signals, and the enemy knows it. A B-17 base in England got bombed and strafed by an unmarked plane that came in with its wheels down. The control tower asked him to identify himself, and he did, but with yesterday's Very colors. Control was satisfied with that — until the bogey started shooting.

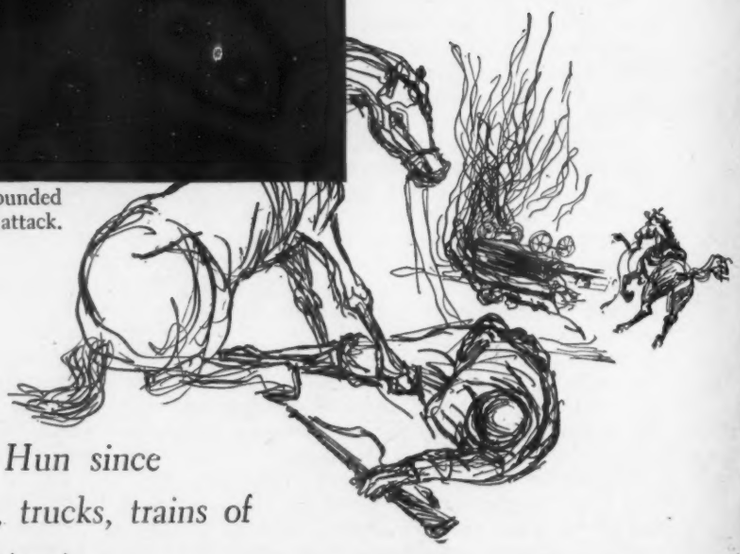
As one of our most decorated combat flyers points out, "As the enemy gets weaker, he's going to get cagier. He has to. And we get less cagey. If people would only get it through their heads that it's worth it to each individual to stay on the ball! For the guy who gets shot up—it only has to happen once." ☆

Nazi Retreat



Thunderbolt casts its shadow near German ambulance convoy carrying wounded to ferry point on the Po River. Nazis waved white flag, P-47 did not attack.

Their lines broken by the Fifth and Eighth Armies, the Nazis in Italy rushed pell-mell for sanctuary in the north, but Allied warplanes that had relentlessly pounded the Hun since Dec. 4, 1942, sought out tanks, barges, carts, trucks, trains of the fleeing Nazis and shot hell out of the retreat



DRAWINGS BY CPL. MILTON WYNNE

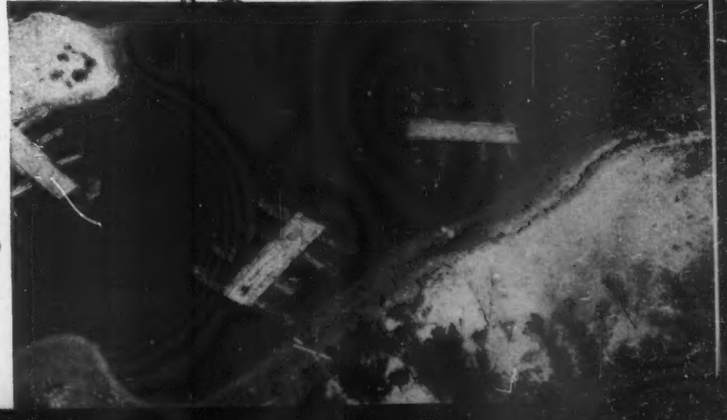
Two horses dragging Nazi artillery piece run wild during P-47 strafing attack northwest of Bologna. Horses were killed, gun destroyed.

Horse-drawn carts, Nazi truck loaded with supplies are spotted on road.

String of Nazi trucks and wagons near Modena explodes and burns after a 12th Air Force fighter attack catches them turning at a cross road.

Nazi tanks, trucks, buses, horse-drawn carts laden with supplies were riddled by P-47s that caught the convoy trying to cross the Tresinaro River.

Pontoon bridges were placed on Po in sections to make them less vulnerable targets for wide-roving MAAF planes.



JOHNNY, GET YOUR GUN—IN SHAPE

A Tip From The Air Inspector

The copilot of a bomber which had been ditched in the Pacific was telling his story after his rescue from an island where he and three other crew members had landed their life raft:

"We found a vacant hut and lay in the brush until a native showed up. He could speak a little English. We told him we wanted food, and he said he knew where there was an abandoned Jap barge with some canned goods in it. We said, 'Lead us to it.'

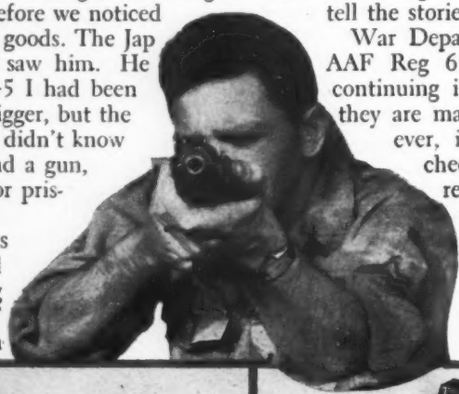
"We were careful in approaching the barge, but had got almost within a hundred feet of it before we noticed a Jap in it filling a sack with canned goods. The Jap saw us about the same second we saw him. He grabbed his rifle, and I raised the .45 I had been carrying in my hand. I pulled the trigger, but the gun didn't fire. It had jammed and I didn't know it. I was the only one of us who had a gun, and I thought we were dead ducks or prisoners, but the Jap began to run.

"The Jap didn't fire until he was out of sight. Then we heard several shots. He was apparently signaling for help. We got out of there fast."

A fighter pilot who had crashed in Alaska's wilds remarked ruefully from his hospital cot:

"I walked in, all right—12 days of it—but I thought I was going to have to crawl on the home stretch. Most of the time I ate nothing but wild berries. For four days, I got along with nothing but water. I eased the ache in my belly by sucking in my guts and patting my stomach. There was lots of small game, but my .45 wouldn't work. I hadn't checked it for weeks. . . ."

These are two incidents of guns that failed because they had not been given proper maintenance. The men lived to tell the stories. But some men don't live.



War Department and AAF directives (POM and AAF Reg 65-31) require commanders to schedule continuing inspections of small arms to assure that they are maintained in serviceable condition. However, individuals should not fail to do some checking and maintenance themselves. Guns require regular use of bore cleaner and preservative oil. Deficiencies should be reported immediately.

To aid in checking small arms, here is a list of the most common deficiencies noted in inspections of units preparing for overseas movement:

PISTOL, AUTOMATIC, CAL. .45

Damaged barrels
Defective safety locks
Trigger pulls in need of adjustment
Worn disconnectors
Damaged magazines (especially lips)

GUN, SUBMACHINE, CAL. .45 M3

Excessively worn ratchet pad
Defective or bent sights
Magazine catch missing
Bent or damaged stock assembly

RIFLE, CAL. .30 M1

Broken firing pins
Defective sights
Loose gas cylinders
Weak operating springs
Tight trigger housings
Loosely fitting trigger housings

CARBINE, CAL. .30

Defective sights
Defective operating slides
Dirty gas pistons
Defective firing pins
Unmodified hammers and hammer springs
Damaged magazines (especially lips)
Cracked stocks

ATC COMMANDOS

(Continued from Page 10)

Jap planes came over to strafe. Seventeen were shot down. The men moved their cots inside the revetment.

These pioneer ATC men on Okinawa were the key personnel of what would grow into a very large organization. They were along because Colonel Luker wanted them to have the background and experience of a new type of operation. Yet they worked like laborers, serviced airplanes, made repairs with hardly more than ingenuity for a best tool.

A tent was spread over an adjacent gully to make a supply warehouse and office. A major, an engineer in civilian life, became unofficial "Director of Sandbag Operations," filling sandbags with the rest and making certain they were piled into proper shock resisting walls. They built an outdoor mess, shower and latrines. They had their first bath three days after they arrived; they did their own laundry in any handy bucket.

They even managed to share what they had with others. The Navy was still using flare pots to light the runway for the night fighters. ATC gave them a set of strip lights brought in by the first plane. And others shared with them. They promoted rations from the Army, lubricating oils from the Navy. They learned the gentle art of making midnight requisitions.

Despite lack of equipment, the most rudimentary personal comforts and sleep, in spite of air raids and artillery shelling, regardless of mud and dust and insatiably hungry insects, these ATC men had a fully organized air transport business going within a week. The planes came in on schedule bringing mail, replacements, medical supplies, plasma, whole blood and even much needed bomb fuses. And they depart on schedule, carrying mail and urgent freight and, most important, the wounded.

The men began to talk among themselves of a possible ATC task force unit, a small organization charged with the job of setting up ATC stations in newly occupied enemy territory. This unit, they said, should do all the dirty work, then be relieved by a permanent airbase unit and sent on with the next task force to establish the next new station. And who, they will ask you belligerently, is more qualified than they for such an assignment. They have learned much and they don't want to waste it.

Remember the old wheeze—ATC stands for Allergic to Combat. You won't think so when some dark night you crouch behind a sandbag hiding from Jap bombs and you hear the cheerful voice of an ATC man sing out, "You should have been here when it was really rough." ☆

PICTURE CREDITS

FRONT COVER: M/Sgt. R. H. Haley. 8-10: Maj. Milton R. Krims. 15, 16: Signal Corps. 22, 44, 45, 46: T/Sgt. Roger Coster, AIR FORCE Staff Photographer. 27 (top): Lt. O. C. Sweet, 3rd Air Force. 47: Corporal Kammerman. 60: T/Sgt. D. H. Brockell.

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B-29 FLIGHT ENGINEER

(Continued from Page 27)

a maintenance man. He is more like an engineer on a ship. He must be able to make emergency repairs during flight; he has to know all about the different systems in an airplane—the wiring system, the fuel system, the emergency landing gear system, and the electrical system.

"Sometimes these problems can be pretty complicated. One B-29 had its control cable shot out over Tokyo. The flight engineer climbed into the back and repaired the cables while they were still over the target."

Sgt. Hayden F. Washington, a typical B-29 flight engineer, was eliminated as a flight cadet for physical reasons. He was reclassified as a gunner-mechanic, and at a Technical Training Command School at Amarillo, Texas, received a general four-engine mechanic's course. This was followed by a 10 weeks' course in electricity at Chanute Field, Ill., where he learned just about everything there was to know about the electrical system of heavy bombers. What had been rumors about a B-29 assignment became an actuality when Washington was sent to the Boeing Aircraft School at Seattle for a special 10-weeks Superfort course. He did sheet metal work, assembled engines, worked on hydraulic, oxygen and electrical systems. He began to know the B-29 from bauxite up. The toughest weeks of the training program, however, were spent at the flight engineer's school at Lowry Field, Colo. As a flight engineer, Washington was no longer concerned with simple airplane maintenance. He was learning how to make flight plans, about lift-over-drag ratios, prop and engine efficiency. He was learning a lot of things you had to work out on paper before you could try them in the air. Most important of all, perhaps, was that Washington had moved up into the realm of cruise control. He learned that cruise control is a method of carving the bomb load out of the fuel reserve.

The man for the job

Captain Norton explained why flight engineers receive such tough schooling. "A flight engineer's responsibility is a heavy one. He's got to make quick decisions, and to make them right he's got to have a good aeronautical engineering background. He must be able to estimate accurately the effects on fuel consumption and airplane performance caused by change in gross weight, altitude and loading conditions. He must check loading, and transfer of fuel as the load decreases. He's got to be able to figure gallons of fuel per hour. He's got to know when to change airspeed to compensate for changing weight and to maintain maximum economical operation."

The flight engineer also carries an abbreviated tool kit for making minor repairs to any reparable part of the airplane. And, finally, there are the tools that are permanent installations on the flight stand—the levers, the switches and the instruments. He must never relax from watching these during the 16 or more hours of the mission.

For his cruise-control job, the flight engineer's tools are the slide rule, the cruise control chart, the climb chart, and the fuel-flow chart. With them he can best calculate altitude, airspeeds and power settings for maximum range. With these tools he must so closely estimate fuel consumption that there will not be more than a 100-gallon error on a 3,000-mile flight.

While it is true that the wing makes out flight plans on the basis of averages and cruise control charts, it is the flight engineer who eventually will determine the exact cruise control because he knows the characteristics of his airplane. The data he compiles are sent up through squadron to wing to command and eventually determine how many bombs will be dropped by a certain number of airplanes on a given target.

The flight engineer is not to be confused with the aerial engineer. The latter is a member of the combat crew of some airplanes other than the B-29; he is a gunner in addition to the duties of offering advice to the pilot on mechanical features of the airplane, of observing the functioning of the airplane in the air, and of reporting mechanical difficulties to the ground crew. The flight engineer, on the other hand, is actually in control of the mechanical functions of the airplane and is an important member of the flight control team.

Flight engineer training consists of 10 weeks at preflight school, 19 weeks of B-29 maintenance and inspection, and 10 weeks at flight engineer's school. Upon graduation from the flight engineer's school, students are now appointed flight officers or commissioned as second lieutenants and receive aeronautical ratings of aircraft observer (flight engineer).

B-29 flight engineer training is open to enlisted personnel assigned to duty with the AAF who can meet the requirements—physical, mental, age, training and others—outlined in AAF Letter 50-113 dated 24 April 1945.—Maj. Milton R. Krims, AIR FORCE Overseas Staff. ☆

The Intercom

As a medium for the exchange of ideas, AIR FORCE presents these answers to its Question of the Month. Replies are those of personnel recently returned from combat duty in the areas indicated.

QUESTION: Of the entertainment you saw while you were overseas, what impressed you most?

Lt. Anthony Veteran, navigator, Italy: "The movies. We had movies everyday in the town of Foggia and twice a week at our base. Without them, I think we would have gone crazy. The thing I liked was that we got the latest movies and none of the extra trimmings which are usually so dull—no travelogues, no unfunny short subjects, just the feature pictures. When we weren't flying, I would often go to the movies twice a day. There were three movie houses in Foggia and I was a regular customer for all of them."

Sgt. Ralph Caporale, statistical control, Italy: "The Ella Logan show. She spent most of her time talking to us about home, telling us that everybody back home was waiting for us, and that we hadn't been forgotten. It was really marvelous. Then she asked the men to request any song they wanted and she sang it for us. We had a great many USO shows, but nothing ever rivaled Ella Logan. She went up and down Italy putting on shows—every place I went the men were talking about how wonderful she was."

1st Sgt. James L. Howell, administration specialist, India: "The dances. The Army and the Anglo-Indians gave dances regularly at Asansol in Bengal Province. An Anglo-Indian band provided the music —they knew American jazz before we came, but the girls could only do the waltz and the one-step. We soon taught them how to jitterbug and they loved it. A lot of people invited us to their houses to teach them how to jitterbug. We sometimes had three dances a week. That entertainment certainly served to break the monotony."

T/Sgt. William Killeen, observer, Southwest Pacific: "The Bob Hope show, with Frances Langford, Patty Thomas, and Jerry Colonna. I saw them on Owi island, in the Dutch East Indies, but I thought I was back on Broadway. They performed right on the line, and Bob Hope christened one of our airplanes. It was the most unusual show I ever saw—there we were, thousands of miles from home, yet only forty-five minutes from Broadway. We talked about it for weeks before they arrived, and for months after they left."

T/Sgt. J. A. Joseph, chief clerk, India: "The Jack Benny-Larry Adler show with Anna Lee. There were more than a thousand men watching that show, and everyone of us went wild. For two and a half hours we forgot there was a war. We saw the performance near Cairo, in an open air theater that we had built ourselves. Anna Lee ate in the GI mess and that certainly won our hearts. The whole thing was perfect. Later, I went to the IB theater and saw a few shows but none of them could match the Benny-Adler performance."

Lt. Paul Slawter, navigator, England: "I never saw much in the line of entertainment. Sometimes I wished that I were in the Southwest Pacific so that I could have seen Bob Hope and the rest of those entertainers. I suppose they had a great many shows in England, but they never got around to the camp where I was stationed. Our base was near Ipswich, which wasn't so far off the beaten path, but I had to go into London for entertainment. Maybe it was because I was there for only nine months, but I never saw any shows."

THIS ~~IS~~ WAS YOUR ENEMY

(Continued from Page 16)

Germany lost the Battle of Britain because of England's emergency fighter production, use of new detection devices and fighter control, the swift adaptation to night fighting. Germany needed more bombers, pilots, and time. By 1941, the GAF was divided among fronts, and England's bomber production was well begun. A phase of German aerial accomplishment which has received little emphasis—except by the aircrews who witnessed it—was the interception that met the first attacks on the continent. Together with the later "Defense of the Reich" in 1943 and 1944, it deserves more consideration than many of the Luftwaffe's more dramatic attainments.

With apparent sincerity, Luftwaffe strategists declared themselves "surprised" by the appearance of the AAF in Europe. Surprise was succeeded by a more unpleasant conviction. The Luftwaffe thenceforth must be purely defensive. After the arrival of the AAF in May, 1942, it became a fixed idea with the Luftwaffe to "convert to fighters." The conversion started too late. Yet it might have worked had it not been for the systematic destruction of the German aircraft production complexes, which reached its climax in February, 1944. Saving much of their production by dispersal of plants, the Luftwaffe might even then have had a chance had not the destruction of oil reserves, transportation, and airfields delayed every phase of German air warfare—most notably the new jet propulsion program and transition training. It was with such prospects that the Luftwaffe turned its hope toward scientific miracles, "secret weapons."

Luftwaffe Brain Trust

This German expectation of miracles was not entirely without reason. Nor were the "secret weapons" entirely a myth. Technical Intelligence still has a story to tell concerning the Luftwaffe's major and minor instruments of air warfare—in electronics, jet propulsion, and new explosive principles. Some of these instruments were the result of distinguished and systematic aeronautical research; others, like the pickaback plane, were ingenious attempts to save the Luftwaffe from earlier strategic or logistical errors. The Nazis may have been oratorical and mystical; German science never was.

At Adlershof near Berlin the Luftwaffe's fortunes were carefully watched, and assisted, by the Deutsche Versuchs-Anstalt fur Luftfahrt. In this aviation research center were focused new theories and experiments concerning planes, engines, instruments, guns. From the beginning, the special genius of this research was immediate translation of ideas into action. Long before the Allies had a realistic proving ground, the Luftwaffe's research men saw their ideas tested by the Kondor Legion in Spain.

These are the Questions

After General Pelz had thrown the Luftwaffe into its last desperate attempt to avert

defeat at the end of 1944, there was time for inquiry into the causes of the Luftwaffe's downfall. The question was split a dozen ways.

Did Milch seal the fate of the GAF with his widely quoted theory that maintenance and supply of parts were unimportant, because the Luftwaffe could rely on such fabulous production rates that every plane disabled would be replaced by one just off the production line?

Was nearsighted reliance on the Stuka an error? Could an immensely bigger production of heavy bombers have weighted the odds in the Battle of Britain sufficiently to assure victory then?

Failing in the heavy bombardment program, should the aircraft industry and the training program have been converted to fighters much earlier?

How real was the dearth of pilots? Was that problem primarily a difficulty in training?

Was the long attack on the German aircraft industry the main reason the Defense of the Reich failed?

If dispersal of aircraft production was a relatively successful defense against strategic bombardment, would the destruction of related systems of fuel production, transportation, and operational airfields have brought the end so quickly?

Can the answer to all inquiries concerning this defeat be put into the statement of a GAF commander, who declared: "Germany lost the war because of the failure of the Luftwaffe, and the Luftwaffe failed because of bad planning"?

These are questions for the strategists and historians. They will be asked, with variations, wherever airpower is hereafter the subject of discussion. A simple fact that stands apart from the first terrifying myth of the Luftwaffe's power and apart from its dejected surrender is that Germany had an air force that in many respects reached greatness. That fact increases the greatness of the victory over it.

—By Capt. Harry H. Ransom
AIR FORCE Staff. ☆

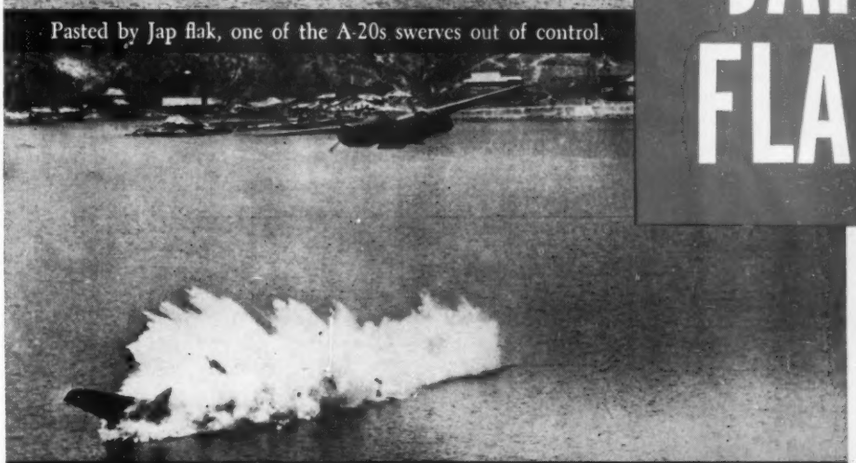
Answers to Quiz on Page 56

1. (B) Cameras
2. (D) P-39
3. (D) Unsatisfactory report
4. (C) Mr. Robert A. Lovett
5. (C) 700,000
6. (C) Nagoya
7. (A) True
8. (A) Continuously pointed fire
9. (A) True
10. (C) $300
11. (D) Corregidor
12. (D) Single-engine fighter
13. (D) P-63s
14. (C) 1,000
15. (A) Dolomite and sea water
16. (C) Same size
17. (A) Stout Field
18. (C) 70 to 80
19. (A) West coast of Africa.
20. Jap bomber Kate

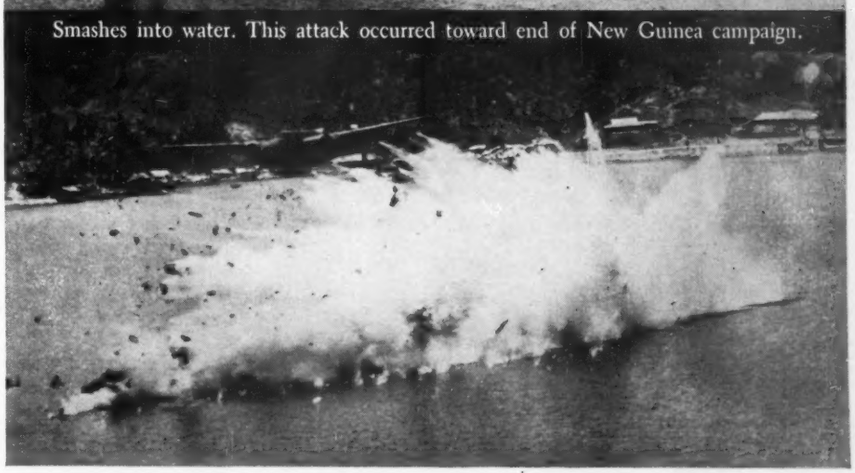
Low-flying A-20 Havocs attack Jap installations at Kokas, Dutch New Guinea.

JAP FLAK

Pasted by Jap flak, one of the A-20s swerves out of control.



Smashes into water. This attack occurred toward end of New Guinea campaign.



SHOOTING THE BREEZE

En Route. The airborne poker game had lasted from Paris to within a hundred miles of New York and the pot had been built up to breathless proportions. The fortune had passed from hand to hand in that remorseless and unequal distribution so native to poker. The field had narrowed down to Captain White and a Colonel Brown. The

big transport plane was nearing home soil when the captain finally called and announced, "Two pair—aces over kings!" The colonel tossed his cards on the table, said "three little fours," and hauled in the pot. In utter dejection the captain reached across the table, picked up the colonel's cards and examined them closely, one by one. Then he placed them back on the table. "Your word is sufficient, sir," he said.

USA. A young private in the AAF Convalescent Hospital at Coral Gables, Fla., returned from overseas with a leg injury, was being interviewed by a member of the medical staff.

"Let's see," began the doctor, glancing at his records, "you are 25 years old."

"Nope, I'm 18," the boy corrected.

"But you are Private Kelly aren't you?" the doctor asked.

"No, I'm not Kelly," the boy said.

"Then, I have the wrong records," the doctor said, somewhat irritated.

"No. Those are my records," the kid insisted.

The doctor looked at the boy a moment, then shook his head.

"It's like this, doctor," the boy began. "I enlisted when I was 15, but told them I was 21. I gave my name and address as Bill Kelly of Atlanta, but actually—I'm William F. True of Washington, D. C."

An investigation was ordered. It revealed that what True had said was true.

Pacific. Somewhere out in the broad Pacific a U. S. Navy destroyer plowed through the rolling waters. Aboard all was orderly and quiet. Then suddenly the sirens screamed, bells clanged, the loud-speaker system blared—"battle stations . . . air raid . . . approaching planes."

At a forward gun two sailors from Indiana adjusted their flak vests and helmets, checked their ack-ack gun and got set for the attack. Far to the east they spotted the oncoming planes which turned out to be a formation of big, silvery Superfortresses which gleamed in the sunlight.

The Navy boys had never before seen a B-29, but one of them commented with certainty and pride:

"Hell yes, they're ours. Nobody else could build anything that big and purty—and make it work."

Australia. A squadron clerk with a supply outfit in this land down under was outstanding in many ways. But most of all it was his clothes. He was a tropical worsted kid, shoulder straps, pleats and handmade patches and chevrons. Not GI, but nice. He married a pretty Australian girl who, in time, went to the States to live with the guy's parents until he would return. They were deeply in love, naturally, but the girl made him promise that he would tone down his wardrobe while they were apart. In other words, just hold everything until they could be together again.

The lonesome soldier was a model of deportment for a couple of months, then one evening he decided no harm could befall him if he got out just one night and tossed his feet around. He put on his sharpest uniform and set out to find some soft lights and sweet music. As he strolled along he thrust a hand deep into a trousers pocket.

Discovering a piece of paper, neatly folded, he drew it out. There, in his wife's handwriting were these words:

"Oh, so you're all dressed up tonight! Why?"

Brooklyn. An air of pleasant expectancy hung over the little bar on Nostrand Avenue. It was Mc-day. McArdle was coming home. A big sign saying "Good Work Johnnie" hung over the bar. A tavern artist had decorated it with gunner's wings and exploding ME109s. One guy said McArdle has 87 missions and another said, hell no, it was 100. A friend read off Johnnie's list of decorations and added, knowingly, "Good Conduct ribbon! That musta come the hard way!"

They wondered if McArdle had changed much and then they fell to discussing how he would come home from the separation center: train to Pennsy station, and then the subway. By comparing telegrams and train schedules they figured it would be another hour—then suddenly McArdle flung open the front door and stood there with a grin on his face and nine kinds of spam on his chest.

"Hello, Johnnie!" a dozen voices yelled. They leaped toward him. Tried to shake the hands which had pulled the triggers over Merseberg, Magdeburg, St. Nazaire, Hamburg and Kiel.

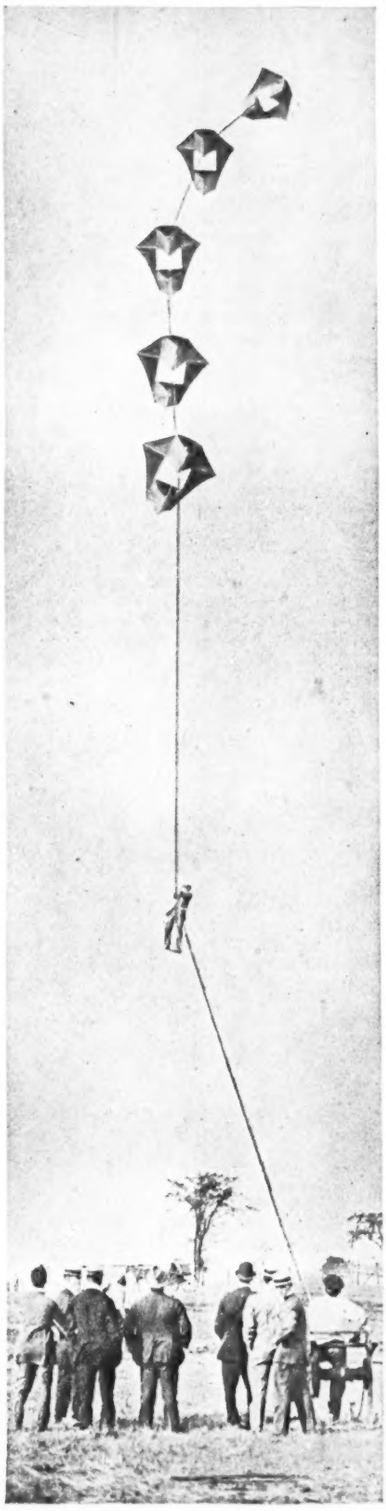
But McArdle called for quiet.

"Friends," he said, "I was so anxious to get home I didn't wait for the train. There's a taxi waiting outside. If you're glad to see me—pay the cabbie 26 dollars!"

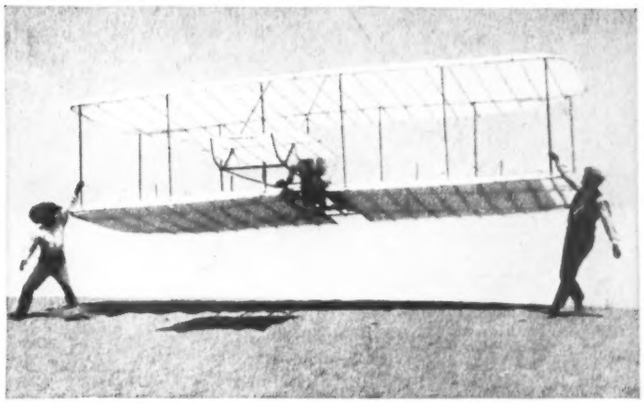
Hawaii. "A man whose civilian profession was taking out teeth for a fee, in a recent rifle drill session, unwittingly practiced on me. No discipline governed this chappie, no rule, regulation or law—for shifting his piece with a snap, he dislocated my jaw.

"His face-lifting use of the rifle, someday I may no longer rue, and since he's a dentist, why trifle—because of a molar or two? But this is my meek-minded protest, I claim a just anger engendered—the cad has submitted an invoice, for professional services rendered!" ☆

The Album — KITES and GLIDERS



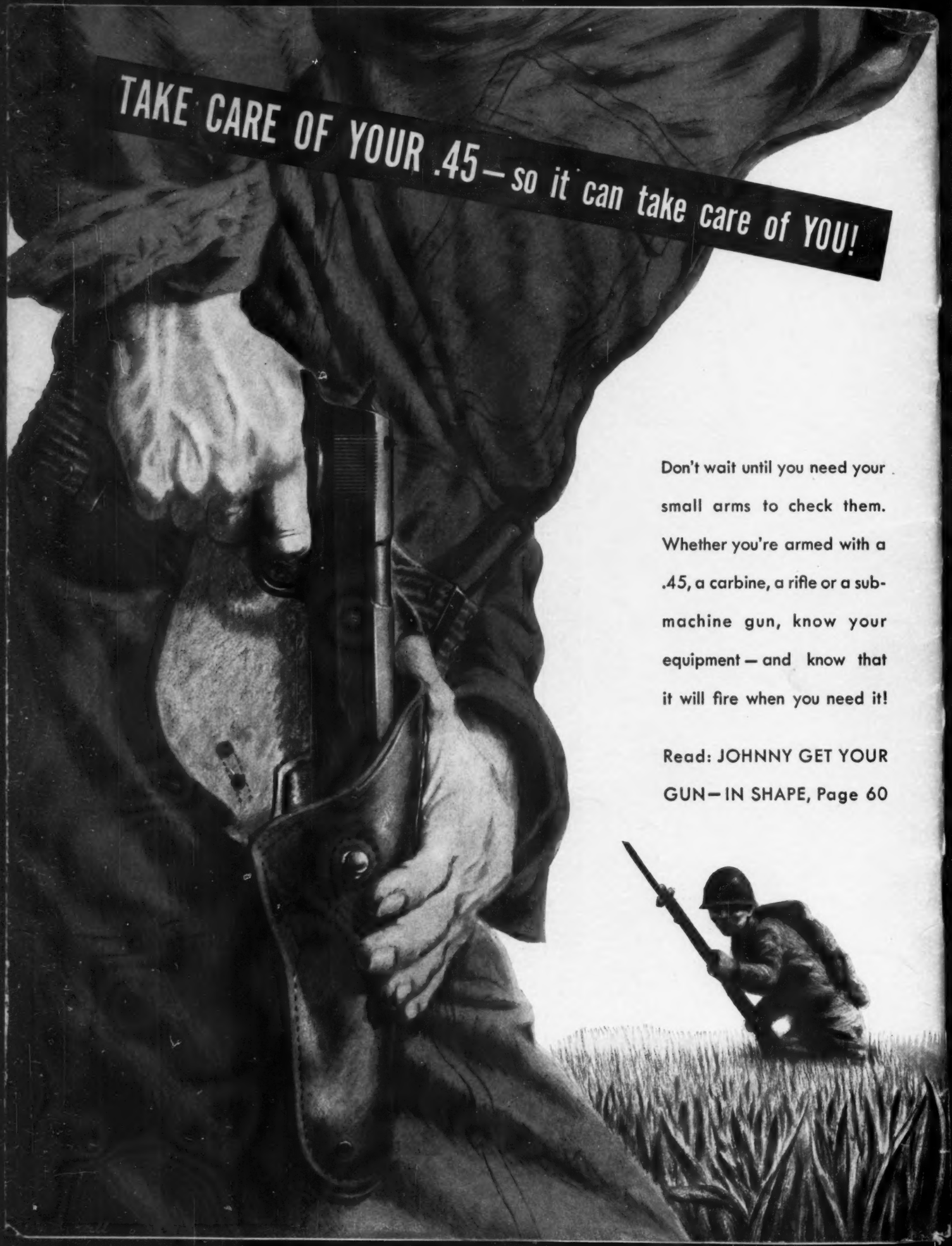
Five Perkins kites (class of 1910) over Harvard Aviation Field hold up young blade who thirsted for higher learning.



1901. A couple of end men are ready to shove their buddy off Kill Devil Hill, Kitty Hawk, in the first Wright glider that had controls.

Charles Hamilton is towed along the N. Y. Central track in weird contraption devised by Israel Ludlow. The truant officer had a busy day.

Father of the pogo stick, Matthew B. Sellers demonstrates a little hedge-hopping in a five-step glider that was quite the thing in 1908.


TAKE CARE OF YOUR .45—so it can take care of YOU!
Don't wait until you need your small arms to check them. Whether you're armed with a .45, a carbine, a rifle or a sub-machine gun, know your equipment — and know that it will fire when you need it!
Read: JOHNNY GET YOUR GUN—IN SHAPE, Page 60